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Managing Strategic Change

in a Railway Enterprise

Volume 1

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ABSTRACT

The objective of this research is to investigate the way strategies are formed in a public sector organization and to assess the role of the Board-members in shaping and developing strategies.

The project consisted of the following distinct steps: (1) The collection and processing of background information concerning the enterprise under study. (2) The collection and analysis of the Board's past decisions over a period of nine years. (3) The interview accounts of the members of the Board (4) The analysis of the interviews at the individual level and the construction of cognitive maps. (5) The testing of the validity of the cognitive maps of the previous stage by employing a quantitative technique in which the interviewees scored on matrices and identified the influence between elements of the strategy, the external, and the organizational environment. (6) The identification of patterns in the cognitive structure of each individual, resulting from both the qualitative (interviewing) and quantitative (matrix scoring) approaches. (7) The attempt to build theory by integrating the different sources of data and generating propositions grounded on data by relating the findings of this study to the existing literature.

The major findings concerned the notion of strategy according to the Board-members' accounts. Thus, the majority of Board-members perceived strategy as something that occurred outside them, something over which they had little control. The Board-members' role, as revealed in the strategy-areas studied, was a legalistic role concerning mostly ratification of proposals without active contribution to initiating and developing new strategies. It is also argued that this Board's composition, structure and processes exhibited deficiencies. The real strategist of the organization was the new General Manager who succeeded not only in creating an integrated strategy but also in getting it institutionalized (that is in establishing commitment among the people of the organization).

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CHAPTER 1

INTRODUCTION

1.1. THE PURPOSE OF THE RESEARCH

The purpose of this study is to add to the understanding of how strategies are formed in a public sector organization which is implementing a Strategic Plan; in particular to assess the role of its Managing Board in the selection and implementation of these strategies. This purpose is achieved:

- (1) By understanding how individuals make sense of strategy, that is, which decisions made and actions taken they perceive as strategic; and
- (2) By looking into how the specific series of decisions/actions converge into patterns, over the period of the Strategic Plan's implementation. Inferences are drawn accounting for the impact of the strategists' notion of strategy on patterns identified. Thus, the forms of strategy will be highlighted and the degree to which they are shaped by deliberation and control or service characteristics will be evaluated.

1.2. THE IMPORTANCE FOR CONDUCTING THIS STUDY

Conducting this research is important for two reasons:

First, there are few studies concerning strategy development in a public setting; among them one may cite:

(1) A recent study in England (Pettigrew et al., 1992) which investigated processes of strategic change in the National Health Service when a major change occurred, concerning the introduction of general management within it. The study concluded that, in the public sector, there is now an increasing interest in moving from a focus on "*policy*" to one on "*strategy*", implying a greater concern with securing action around espoused policies.

(2) The Quinn et al. (1988) studies concerning (i) the National Film Board in Canada and (ii) a university setting; they investigated how decisions are made and how strategies evolve; and

(3) The Hickson et al. (1986) study on top strategic decisions which investigated a considerable number of decisions in private and public firms; yet, these decisions were distinct, they did not concern a process of changing.

Second, public sector firms are worth studying because:

(1) They play an important role in the economy of a country, in terms of the investment allocated and the manpower employed; they also play an important role in society, in terms of the way in which they set forward the concept of public interest.

(2) It is important to study the external context of these firms, in terms of the political-economic system and its influence on the firms themselves. In countries with different political-economic systems, the pressures exerted on the public enterprises may probably be of differing nature; this is important to be assessed. The same would probably be true when the political/economic orientations within the same country are changing. Finally

(3) The constituency of a public firm's Board, as representative of the stakeholders' group, is revealing of how different stakeholders may provide a distinctive account of the process of change when rationalizing about actions and referring to reactions and interactions that preceded them when negotiating around proposals for change. The study of a heterogeneous top management team is also important because much controversy exists between researchers even of private firms as to the impact of Board characteristics on its functioning and, ultimately, on performance. There are studies that argue that employees' participation on Board (like the German co-determination studied by Benneli et al., 1987) has no effect on the firms' economic efficiency, whereas others argue, on a theoretical base, about how the heterogeneity of a Board in terms of its composition, may contribute to improving the quality of decision making.

1.2.1. The Study's Context and the Key Themes

For many years, especially after World War II, rail transport in Greece confronted problems, the most serious of which relate to the industry's low earnings and to the diminishing market share. The costs of producing rail services have risen much more rapidly than operating revenues. The deficit, which according to the legislation is to be covered by the State, is ever increasing since governments, being unable to cope with it, provide a declining proportionate share of operating assistance.

The public nature of railways' ownership emphasizes the important role played by governmental officials in the setting of organizational goals and the supervision of the enterprise's activities. On the other hand, the employees' unions also possess considerable power; the long history, the large size of the enterprise and the special legislation usually protecting employment, all have established solid practices to confront management efficiently, especially on the grounds of rewards (salaries and promotion). The role of leadership deserves special attention in a public enterprise context. General Managers follow the fortunes of the political party in power and sometimes their tenure in office is too short in order to be judged against outcomes. The role of politics is sometimes overwhelming. The press repeatedly points out the dangers for the economy from the use of large state enterprises by politicians as reservoirs of slack resources, to be exploited for political or private purposes. Granting employment positions for patronage, steering investments for maximizing votes, or even awarding contracts on bids in return for contribution, all these limit to the utmost managerial authority. One may then wonder about the issue of organizational control since, under such circumstances, attempts to accomplish change fade away when the organization is forced to respond to these "*necessities*"

When this study was undertaken, although the enterprise was operating in an era of fiscal restraint, a major modernisation plan was being implemented concerning the renewal of infrastructure, that is, the doubling of track, the installation of new signalling/telecommunications systems and the acquisition of new rolling stock. The revival of European railways, due mainly to the introduction of high-speed quality services, has induced new perceptions in the public authorities and the public at large; this has resulted in investments for the creation of modern railway infrastructure.

During the period of the Plan's implementation, several changes occurred in the firm's external environment, such as a change in the government in power, and new legislation concerning public sector firms and imposing pressures for rational allocation of resources, aiming at the enterprise's functioning as a commercial undertaking. Yet, at the same time, the enterprise had to comply with norms concerning service rates and

service levels, that is to realize what is broadly understood as the "*social*" role of the state-owned railway. A major change (required by the new legislation) was also introduced to the enterprise's Managing Board. Employees' representatives were for the first time appointed to take seats on this Board, and this happened to occur in a period where a strict economic policy imposing retrenchments and cutbacks on budgets as well as freezing of wages was launched by government. The new Managing Board consisted, therefore, of governmental officials, senior managers and employees' representatives. A major issue is raised, consequently, related to the firm's pursued rehabilitation. That is, given the major changes in its context, which way did the firm take forward the process of implementation? Specifically, which way did the firm -in terms of specific actions- decide to pursue its objective and by which means it achieved to implement change?

Perceptions of decision-makers about how these actions came about, which of them are considered as strategic, which are the different "*world views*" that may be espoused, would all be highlighted and evaluated since it is assumed to be a crucial input for finally understanding what is strategy and how it emerges and develops in a public firm.

1.3. THE AUTHOR'S INTEREST IN CONDUCTING THIS RESEARCH

The implementation phase of the Rail Modernization Plan started in a low pace, almost ten years ago. The author of this thesis joined the railways as an engineer seven years ago and served at different posts ranging from studying and supervising works in the track modernization projects to designing investments proposals and programmes measuring productivity, as she moved up the hierarchy. During this time, she experienced difficulties because seldom she had a clearly defined goal to meet and many times this was expressed openly by other colleagues as well. Especially, in periods when limited funding, mainly of operating activities, was at issue, the attitude on the part of seniors managers that "*things come the way they come and nothing can be done about changing them*", was conveying to lower levels of management. This, in turn, impeded any creative response to an environment which *de facto* was perceived as hostile and deterministic.

During this period, a new institutional scheme was inaugurated in the public sector enterprises. Employees' representatives were appointed to the enterprise's Managing Board and a Supervisory Board was established in which major constituencies participated. Despite the fact that the new scheme was introduced in a period of severe fiscal restraints, employees expectations regarding its success were high. It was believed that with the aid of the Supervisory Board the firm would be able to establish clear and measurable objectives. It was also believed that the new scheme would provide the basis

for structuring the activities of the enterprise around an integrated and organization-wide orientation towards new markets, since the variety of the stakeholders involved would constitute a strong supportive framework for the interests of both the community and the enterprise.

The award of a State scholarship for conducting research in the domain of railway management gave, finally, the author the impulse to conduct research into the field of strategic management in a public firm.

1.4. THE RESEARCH QUESTIONS

As described in the first section, central in the study's consideration of the organizational strategy is the concept of decision-making as substantiated by members of a managing Board, in the context of the implementation of a strategic plan in a public-sector firm. In terms of the terminology used throughout the study, the Strategic Plan, which aims at providing high-speed train services, refers to the rail modernization activities comprising technical projects, procurement of new rolling stock units, installation of new systems and establishment of procedures and behaviours to improve relations with labour. Strategists are the decision-makers, members of the Managing Board responsible to guide the enterprise's activities.

(1) The unit of analysis is the Board and the strategists within it. However, since the strategy formation is examined and decisions are the means by which this process is materialized, it follows that, in order to study the way in which strategy develops, the Board's decisional activity over time must be depicted and analysed. The first grouping of questions should be related to delineating this longitudinal activity. These are:

- Which are the decisions made by the Board and how can they be classified into categories?
- How can these categories (called hereafter decision-areas) be designed and which are the associated patterns of decisions over time, depicting their frequencies, across different decision-areas?

(2) In order to understand how members belonging to various stakeholders' groups rationalize about decisions made, the second grouping of questions is presented which investigates their disaggregated views: These are:

- How strategists rationalize about decisions made and especially about the ones they identified as strategic?
- What factors are contained in their reasonings and how are they related to each other?
- Which are the relationships among strategic decisions themselves?

(3) In order to identify the causes that shaped consistent patterns in specific decision-areas as well as the reasons that inhibited the consistency of decisions in other areas and shaped other patterns, the study attempts, by articulating strategists' rationales and decision outcomes, to account for the phenomenon investigated. The third grouping of questions refers to it. These are:

- Given the strategists' rationales, how can the patterns associated with various decision-areas be explained?
- Is there a relationship between consistency in decision patterns and shared views about strategic decisions?
- How can other decision patterns (cyclical, emerging, sporadic) be explained in terms of the respective strategists' rationales?
- Do the latter reveal differences in perceptions? Where can the source of these differences be allocated?
- Is the contribution of the members of the Board to developing, implementing, and refining strategies important or does it not exist?
- Which way are decisions made within this Board? Which way are strategies formulated and/or changed in this enterprise?
- Which are the Board roles in this process? Are the strategists determined to cope with difficulties and strive to make the enterprise achieve its objectives or a legalistic role appears as dominant (decisions should be ratified at this level) and results in draining strategic management's time and creativity?

1.5. THE RESEARCH STRATEGY

As stated previously, the study's objective is the understanding of the strategy-making process as substantiated through (1) an analytical perspective centring on the decisions made by the Board; and (2) a behavioural-political one based on the rationales about strategy (and the environment) of the Board-members. Examining these rationales and especially how they interrelate and interact and how they might have shaped the pattern of decisions would reveal a good deal about managerial processes and Board's functioning.

The study comprises three main phases.

(1) The first phase concerns collection and analysis of data deriving from archival evidence. The following steps summarise the way in which the tasks undertaken to answer the first grouping of the study's questions were carried out:

(i) The Board's decisions were collected from the official organizational documents. These decisions were made over a period of ten years and cover the whole period of the implementation of the plan.

(ii) Decision-areas were derived, using a classification scheme which helped reduce the cumbersome number of decisions into a manageable number of decision-areas.

(iii) Patterns depicting the frequency of decisions across the identified decision-areas were produced, as well as a list containing the titles of all the decision-areas.

(2) The second phase refers to the empirical evidence collected through interviews with the Board-members. The following steps summarise the way in which the tasks undertaken to deal with the second set of questions were carried out.

(i) The members of the Board were interviewed in depth; during the interview, they were presented with the list containing all the decision-areas, and were asked to comment on them, to define the decision-areas they considered as strategic, to identify the factors influencing and/or being influenced by them, that is to explain the way in which these decisions/actions, by being implemented further down in the hierarchy, produced concrete results. These semi-structured interviews were tape recorded and transcribed verbatim.

(ii) The strategists' rationales were analysed and their cognitive structure was depicted individually along the so-defined strategic decision-areas, on a certain type of cognitive map, named influence diagram. The maps contained three areas (namely the environment, the organization, and the strategic decisions); along these maps, the concepts derived from the interviews were classified, and links illustrating the impact of various factors on strategic decisions as well as the influence of strategic decisions on other factors were traced.

(iii) Because of the differences revealed in the influence diagrams, another cognitive map (a matrix map) was designed by the author of the thesis, based this time on the majority of the decisions identified by all strategists as strategic, and strategists were asked to fill in scores denoting the existence and the perceived strength of relationships between strategic decisions and factors from the inner and outer environment of the firm. The aim here was (1) to measure the perceived strength of the relationships identified and, (2) to investigate whether a different methodological tool would render more homogeneous their responses. The response, on the part of strategists was much smaller than in the interview phase, thus definite inferences cannot be drawn concerning similarities and differences between the two types of cognitive maps. Yet, some findings that are considered important are reported in **Chapter 7** which deals in detail with the analysis of cognitive maps.

(3) The third phase of the research deals with the integration of all the evidence. It is an interplay between (1) the data and the analysis carried out so far, and (2) the interpretation of them; it is specifically concerned with the third and four groupings of the study's questions.

(i) First, an investigation of the relationships between the strategists' cognitive structures and patterns of strategic decisions is undertaken. By means of theorizing, the way decisions are made within each strategic decision-area is presented and it draws on relative findings from the literature.

(ii) Then, the new findings are presented and propositions accounting for the unique facets of the processes studied are generated for further inquiry.

1.6. THESIS STRUCTURE

The thesis consists of eight chapters. Information about specific details in the analysis process as well as results are presented in seven appendices. The content of each chapter is summarised below. Chapters dealing with data analysis also summarize briefly the major findings. Thus,

Chapter 2 reviews the literature on **Strategic Management and Decision-Making Processes** and presents referenced material pertinent to the thesis themes. The chapter is organised around six major units:

- (1) The issue of strategic management is examined alongside its two principal dimensions as identified in literature (content and process), as well as specific characteristics of strategic management in public enterprises.
- (2) The issue of strategic change, its meaning, classification and modelling, as well as the identification of the forces which influence the occurrence of change are discussed.
- (3) The third unit deals with strategic decisions (characteristics of strategic decisions, types of organizational decision processes, political characteristics, psychological context, consensus in the strategy process).
- (4) The fourth unit examines the issue of cognition and interpretation of the process of change (organizations as interpretative systems, tools for research in human culture).
- (5) The fifth unit examines the strategic role of Boards of Directors (theoretical perspectives of the Boards' role, Boards' functioning and performance, Boards' demographics and composition).
- (6) An attempt is made to highlight the gap identified in the strategic decision-making literature, that is to understand and explain the nature of strategic choices and how these are formed, by blending two data sources, namely patterns in streams of decisions and patterns in "*operationalizing*" the concept of strategy.

Chapter 3 deals with the theoretical framework that led to the choice of this type of research (**Background to the Research Design**) and argues for its relevance to the purposes of this study.

- (1) The chapter describes qualitative research, its most used methods, and argues about the legitimacy to employ this type of research in terms of the study of processes of change in context.
- (2) The chapter also deals with the specific method employed -the case study- and sets the criteria for selecting this particular enterprise.
- (3) The final part of this chapter is devoted to the theory-building process employed in this study, and to the method of inferences -analytic induction- used to achieve it.

Chapter 4 (Research Methodology) outlines the six steps of the data generation and analysis process, namely:

- (1) The collection and analysis of the Board's past decisions over a period of nine years.
- (2) The conducting of interviews with the members of the Managing Board of the enterprise.
- (3) The analysis of the interviews at the individual level via the construction of cognitive maps.
- (4) The testing of the validity of the cognitive maps of the previous stage, by employing another type of cognitive maps (in which quantitative techniques can be applied), that is by asking, at a later phase, the interviewees to fill in matrices of strategy-elements.
- (5) The identification of patterns in the cognitive structure of each individual, resulting from both the qualitative (interviewing) and quantitative (matrix scoring) approaches.
- (6) The inference of propositions that would account for the phenomenon under study and which would also draw on relative findings of other pieces of research.

At each step, a description of the methodological tool employed is offered, together with a presentation of its advantages and shortcomings, identified in previous research.

Chapter 5 (Board's Decisional Activity Over the Period of the Plan's Implementation) is concerned with (1) analysing all decisions made by the Board during the implementation of the Strategic Plan, and (2) depicting their patterns in terms of the frequency of decisions within each decision-area. The chapter develops in two parts.

(1) The first part deals with the categorisation of almost 1400 decision-events made by the Board over a period of 10 years in 49 decision-areas.

(2) The second part depicts patterns of decision-areas and comments on the tendencies revealed in them.

Additionally, **Appendix A** (Organizational Background), provides information on the characteristics and the performance of the studied enterprise; **Appendix B** (Implementing the Strategic Plan) offers details on the plan under implementation; and **Appendix D** (Coding Information from Archival Evidence) provides detailed information about the categorisation process.

What this chapter revealed, was that Board's decisions covered a wide area of organizational activities. These were ranging from resources' allocation for modernization projects to approvals of special tariffs for freight customers, or from decisions concerning structural rearrangements to decisions referring to legal matters. In total, 49 decision-areas were distinguished. Further, the patterning of decisions within the various decision-areas exhibited much variety. There were consistent patterns, cyclical patterns emerging patterns and, finally, sporadic ones. This showed that in some areas there was a constant flow of activities, in others decisions exhibited a propensity to converge yet this was never achieved, while in some areas an ever-increasing number of decisions denoted an area of importance (or a situation denoting a problem or an opportunity).

Chapter 6 (Analysing Data at the Individual Level), based on empirical evidence derived from interviews and scores on matrices, deals with mapping the strategists' rationales in terms of the strategic decisions as identified by them and the influence upon these decisions, stemming either from the organizational or the external environment. The analysis is a first evaluation of the results and consists of two steps that refer to the different data-sources used. Thus:

(1) The first phase entails the analysis of retrospective interviews by means of influence diagrams; and

(2) The second phase provides a tabulation of the matrices' scores and investigates further the type of the relationships between two cognitive elements, by analyzing direct relationships between strategic decisions influencing other factors or being influenced by them.

Influence diagrams revealed differences between the strategists as far as the location of factors (to which sector they belong) and the influence perceived (direction and sign) are concerned. However, the differences seemed to be accommodated when looking at stakeholders' groups. For instance, managers and employees' representatives generate the bulk of their concepts in the organizational sector, the environment being perceived as exercising a negative impact on decisions, while administrators tend to balance organizational and environmental sectors. Yet, despite similarities between managers and employees, the numbers of factors in the environmental sector the latter perceive differ sharply, ranging from being equal with the ones in the organizational sector to being only a few. Also, the nature of factors pertaining to the organizational sector and related to strategic decisions differs considerably.

Cognitive maps derived from matrices compared to the ones based on interviews, present similarities as well as differences. Similarities concerned the negative impact of the external environment (where government is the determinate factor) on the implementation of the Rail Plan as well as the impact of financing on modernization projects. Differences concerned the case of employees' representatives that filled low scores concerning the organizational cause of performance monitoring and of organizational structure in an idiosyncratic function in relation to their influence diagrams (apart from one case that exhibited remarkable consistency). Managers exhibited striking differences between them on causes of performance monitoring the same also applies to the organizational structure.

The contents of **Appendix C** (Influence Diagrams), **Appendix E** (Rationale for Links), **Appendix F** (Scores from Matrices), and **Appendix G** (Groups: Drawing Composite Maps) are relevant to this chapter.

Chapter 7 (Explaining Individuals' Data: Looking for Patterns) takes one step further the analysis of influence diagrams by dealing with the task of tracing the meaning of strategy in context, that is, according to each strategist. Afterwards, the chapter proceeds to uncover patterns across the maps (both the influence diagrams and those derived from matrices) in order to compare them and discover similarities/differences.

The individual analysis of the strategy concept in context revealed different definitions. Thus, for the General Manager, an extroverted perspective is illustrated, whereas administrators represented views that could, more or less, be described as submissive to government's directives. The various perspectives contained in employees' representatives definitions are also striking and the same applies to managers as well, who developed a perspective that might be defined as frustrated.

The detailed analysis of patterns, based on the structural configuration of influence diagrams, intensified the observations that stemmed from the first evaluation undertaken in the previous chapter. Thus, the General Manager locates the greater number of factors -exhibiting a great diversity as well- in the environmental sector, whereas managers and employees in the organizational one, looking at structures and processes. Also the perspective conveyed by the diagrams was different. Either decisions were seen mostly as means, or, other times, as ends, while others are balanced between ends and means. The length of chains of reasoning (including strategic decisions) is striking. Administrators tend to exhibit shorter argumentations, while longer chains of reasoning of managers and some employees' representatives tend to be associated to performance. Overall, a small set of decisions impacts directly or indirectly on performance.

Patterns derived from the algebraic manipulation of matrices showed that, the strength of the perceived relationships was based on personal grounds. Therefore, the concept of strategy and the associated factors cannot be related to magnitude of factors, at least if using the same methodology and/or methodological tools.

Chapter 8 (Theory Development) aims at integrating the two data sources used in this study, namely the archival evidence concerning the decisions' outcomes, and the Board-members' notion of strategy. By means of inferences, it accounts for the way strategies develop in this public organization and reveals the role of the Board-members. Apart from the introduction, the chapter develops in six sections each of which attempts the following:

- (1) To examine the concept of strategy across the Board-members; to discuss its main characteristics; and to argue about similarities and differences of these characteristics by reference to the respective ones that were traced in the literature.
- (2) To examine the Board's attributes; to reveal problems originating in the Board's composition, structure and processes.

- (3) To address the role of the Board-members in the strategic areas studied, in terms of their involvement, commitment and consensus to change.
- (4) To generate a typology capable of integrating the major findings of the thesis.
- (5) To highlight the role of the General Manager as the only strategist on this Board; to discuss the way strategies develop in this enterprise.
- (6) To build on the new findings of this research in order to propose lines of further inquiry.

CHAPTER 2

STRATEGIC MANAGEMENT AND DECISION-MAKING PROCESSES

2.1. INTRODUCTION

As stated in the previous chapter, the objective of this research is: (1) To examine the way in which the Board-members' operationalizations of the notion of strategy impacted on the patterns of the decisions they made, during the implementation of a company's Strategic Plan; and (2) To evaluate the degree of their influence on strategy formation.

The theoretical background and the major research findings, both examined in this chapter, may assist in offering insights as to which themes and ideas, pertinent to the research topic, have been dealt with in literature. Thus, a limited empirical evidence in the examined topic may be spotted and the importance to conduct research may be demonstrated. The chapter develops in six parts.

(1) First, the concept of **strategy** is highlighted, along with work of researchers on how strategies form in organizations; then, the issue of **strategic management** is examined, alongside its two principle dimensions as identified in literature (content and process). Concerning the process of strategic management, the distinction between synoptic and incremental models is highlighted and discussed. The development of strategic management is further discussed, as well as the specific characteristics of strategic management in public enterprises.

(2) The second part of this chapter deals with the issue of **strategic change**. It discusses the meaning of strategic change and offers a classification and modelling of changes in strategy. It concludes with an identification of the forces which influence the occurrence of change.

(3) The next part deals more specifically with **strategic decisions**. It examines the characteristics of strategic decisions as well as the types of organizational decision processes. It discusses both the political characteristics and the psychological context of strategic decision-making and examines the issue of consensus in the strategy process.

(4) The fourth part examines the issue of **cognition and interpretation associated with the process of change**, by discussing the organizations as interpretation systems, and the way in which managers construe key organizational/environmental events, and by examining tools for research in human culture.

(5) The fifth part examines the **strategic role of Boards** of Directors by discussing the theoretical perspectives of the Boards' roles (legalistic, resource dependence, agency theory), the Boards' functioning and performance, and the Boards' demographics and composition (labour participation).

(6) Finally, in the synopsis of this chapter, the shortcomings of past studies, as identified in the literature review, are summarised and the thesis objective is evaluated, in relation to these shortcomings.

2.2. THE STRATEGY CONCEPT AND STRATEGIC MANAGEMENT

It is generally accepted that an organization's **strategy** determines the extent of match (or alignment) between its external environment and its internal processes and structure. Although this alignment may be the product of a formal planning process, it is just as likely that a firm's strategy, at any point, reflects the aggregate of numerous decisions or behaviours that have taken place over a period of years (Fredrickson, 1983).

Bourgeois (1980) offers two hierarchical definitions of strategy: (1) the *domain definition* strategy which "refers to the organization's choice of domain or change of domain that occurs when for example a firm diversifies into or exits from particular products or markets" (p.27); and (2) the *domain navigation* strategy which "refers to competitive decisions made within a particular product-market (e.g industry) or task environment" (p.27). **Bourgeois** notes that once a domain or competitive arena has been determined by primary strategy, then the organization is subject to environmental constraints which are the central focus of the contingency school. Also, he advises researchers to make explicit which level of strategy they investigate, and points out that

sometimes the weight of several secondary decisions has a cumulative effect and may give rise to a primary strategy.

Mintzberg and Waters (1985), subscribing to the view of Fredrickson, define strategy as the identified patterns or consistencies in streams of organizational actions. They further develop the following typology of organizational strategies:

(1) The ***planned*** strategy, where the leaders formulate strategy which is followed by its implementation; the environment is assumed rather predictable or the organization is quite powerful to impose its plans on it.

(2) The ***entrepreneurial*** strategy, in which one individual in personal control of the organization can impose his vision on it through his personal control of its actions in an environment considered as cooperative; though these types of strategy usually apply to young or small firms, sometimes they can be found in larger organizations which -in conditions of a crisis- follow the direction of a leader who has vision and will.

(3) The ***ideological*** strategy, when members of the organization adopt a vision and identify so strongly with it that they pursue it as an ideology, in an environment that plays no important role "*since the purpose of ideology is to change it or else to insulate the organization from it*" (p.262).

(4) The ***umbrella*** strategies, where the leaders define broad guide-lines for behaviour and let other actors to specify details within them; these strategies usually apply when leaders have partial control over other actors in the organization or when the environment is complex, out of control (thus unpredictable) and many actors must be able to respond to it.

(5) The ***process*** strategies, which are appropriate when the leader wishes to control the process of strategy-making and leaves the content of it to others.

(6) The ***unconnected*** strategies, which occur when an organizational unit that is loosely connected to the rest and which has considerable discretion is able to realize its own pattern in its stream of action.

(7) The ***consensus*** strategy, which exists when different actors naturally converge on the same pattern so that it becomes pervasive in the organization without the need for any central direction or control. And, finally,

(8) The *imposed* strategy, when the environment exerts such a control, that the organization is forced into a pattern of actions.

According to Johnson (1987), strategic management is concerned with deciding on strategy, and planning how that strategy is to be put into effect. It can be thought of as having three main elements within it:

- (1) **Strategic analysis**, in which the strategist seeks to understand the strategic position of the organization.
- (2) **Strategic choice**, which is concerned with the formulation of possible courses of action, their evaluation and the choice between them; and
- (3) **Strategy implementation**, which is concerned with planning how the choice of strategy can be put into effect.

In practice, these stages do not take a linear form. It is very likely that, far from being separate, the stages are very much involved with each other; it is quite possible that one way of evaluating a strategy would be to begin to implement it, so strategic choice and strategy implementation may be carried out together. It is also very likely that strategic analysis will be an on-going activity and so it will overlap with the implementation of strategy (Johnson, 1987; Mintzberg, 1990).

According to Huff and Reger (1987), the discipline of strategic management traces its origin to the works of Chandler (1962), Ansoff (1965), and Andrews (1971). However, these books were among the first to propose formally the distinction between the process of strategic management and the content of strategy. This distinction has tended to divide research ever-since: researchers study content or they study process. Schendel and Hofer (1979) further solidified these categories by suggesting that this and other sub-divisions would facilitate research progress in the field.

It has been argued that the distinction between *process* and *content*, which seems so reasonable on the face of things, is now becoming an impediment to progress in strategic management research (Huff and Reger, 1987). Other researchers have noted that the content-process dichotomy is a disciplinary and methodological artifact. Usually, behavioural scientists focus on how decisions are made, whereas economists are concerned with what decisions are made (Bourgeois, 1980).

Strategy research characterized as **content research** has focused on the subject of the strategic decision itself. In the last decade, considerable attention has been devoted to learning more about merger, acquisition, and divestment strategies; entry, exit, and

mobility barriers; product/market differentiation; turn-around; vertical integration and similar subjects. Content research has focused on linking specific decisions and broader economic structures to performance outcomes. It has also given considerable attention to defining similarities and differences among strategic units within the firm, among strategic groups within industries, and among firms in similar circumstances, such as growth or decline in demand (Huff and Reger, 1987).

Process research, in contrast, has been defined as research primarily focused on the actions that lead to and support strategy. Research in this area has included prescriptive and descriptive work on planning methods and decision-making, with attention directed toward the effectiveness of alternative means for generating and implementing strategy (Huff and Reger, 1987). The impact of individual and group characteristics and organizational structure on the formation and implementation of strategic decisions and on organizational performance have also concerned researchers in this area (Hambrick and Mason, 1984; Greiner and Bhambri, 1989; Noel, 1989; Murray, 1989; Dess and Origer, 1987).

2.2.1. The Content of Strategic Management

In the early 1980s, researchers noted that the outcome of the descriptive work on strategy processes up to that time lacked any predictive power; as a result, a shift in interest occurred, away from the process of *strategy formulation*. Topic of inquiry became the *implemented strategy* rather than *strategy implementation* and the interest was centred on the content of business strategies (Huff and Reger, 1987).

Bourgeois (1980) distinguished two levels of strategy in a hierarchical order: (a) the *domain definition* strategy refers to the organization's choice of what particular product/market should the firm provide/serve; (b) the *domain navigation* strategy concerns the competitive decisions made within a particular product/market or task environment.

Porter (1980, 1985) asserted that each firm has to select one of three generic strategies in order to achieve above-average performance in an industry: cost leadership, differentiation and focus (the latter strategy being either cost focus or differentiation focus). Porter emphasized that the notion which underlines the concept of generic strategies is that competitive advantage is at the heart of any strategy; to achieve it, a firm must make a choice about the type of competitive advantage it seeks to attain and about the scope within which it will attain it.

Hambrick (1980) found an analogy between Porter's typology of generic strategies and that developed by **Miles and Snow (1978)**. Thus,

- A "*prospector*", who innovates early in the face of product/market opportunities, is pursuing a particular type of differentiation strategy.
- A "*defender*", who maintains a stable offering, may choose to exploit its stability in the form of low costs (cost leadership), product quality (another form of differentiation) or some combination of them.
- On the negative side, Porter's "*stuck in the middle*" and "*reactors*" of Miles and Snow are placed. Hambrick (1980) asserted that these low-performance strategies indicate either a mismatch between the business and environmental demands or unsuccessful attempts to mimic the industry's successful strategies.

Other researchers argued that elements of strategy cohere with elements of structure, strategy-making processes, support systems, cultures in common configurations (Miller and Friesen, 1984; Miller, 1986) which are themselves interlinked, in that there are natural congruences between particular strategic, structural and environmental configurations, appropriate to particular widely encountered situations called contexts. According to Quinn, Mintzberg and James (1988), one may find:

- The *entrepreneurial context*, which encompasses situations where a single individual directs an organization with a clear and distinct vision who makes strategy and modifies actions rapidly -if necessary- as events unfold.
- The *mature context*, which refers to a machine-like bureaucracy with mass production or mass provision of services which usually favours cost leadership as a strategy. Strategy emanates from the strategic apex where power lies and perspective is broad.
- The *diversified context*, which includes organizations with distinct structural divisions to deal with each distinct business. Here corporate strategy involves more than the choice of a good portfolio; it seeks synergies among the business-units and with the corporation.
- The *innovation context*, that is one in which the organization often must deal with complex technologies under conditions of dynamic change where a strategic leadership usually establishes the types of processes in which specific actions will grow of their own accord around individual innovations.
- The *professional context*, which concerns organizations that depend on experts to get their work done but this work though complex is not dynamic; it is rather

stable in nature and slow to change. Coordination is based on the standardisation of skills and its associated parameters, training and indoctrination, while control over his work is exercised by the professional himself.

Quinn, Mintzberg and James (1988) note that power in this approach lies in that configurations are predictive, because they are composed of mutually supportive elements, where the presence of certain elements can lead to the reliable prediction of the remaining ones.

There are also researchers who advocated the need of *contingency approach* to organizational strategy. By means of modelling techniques, they attempt to establish general associations between the characteristics of organization, their structures and the environment in which they operate. **Ginsberg and Venkatraman (1985)** developed an analytical scheme delineating the domain of contingency approaches to strategy; this scheme focuses on the following dimensions:

- *Input*, referring to environmental dimensions.
- *Process*, concerning organizational dimensions, and
- *Output*, referring to various performance criteria.

This model indicates that beside organizational and environmental contingencies, the level of performance dictates a range of strategic options available to a business.

Ginsberg and Venkatraman (1985) further argued that though strategy is seen as a response to the above three major types of contingencies, the choice of strategy itself serves as an important contingency for many administrative decisions such as organizational structure and management systems. Thus, the viewing of strategy as the *exogenous variable* that influences the organizational context of performance adopts an implementation perspective. Inversely, the treatment of strategy as a *dependent variable* emphasizes a formulation perspective.

In general the value of contingency studies diminished as their findings could not be secured. **Pettigrew (1992)** notes that apart from a consistent finding that size was positively related to the rate of innovation other findings did not exhibited robustness. He further asserts that when contingency theorists moved on from structural factors to non structural ones (considering social and cultural characteristics of the settings studied) then, their findings' strength was enhanced.

Finally, as researchers noted, the main appeal of looking exclusively at strategy content is that no attention need be given to management's goals or "*intended*" strategies nor to the political activity inherent in arriving at strategies; thus the academic researcher can rely almost on secondary data source (Bourgeois 1980). The content approach shed light to the description of strategic outcomes and their contribution to economic performance but it ignored the processes through which these outcomes were realised. The next section deals with strategy-making as a process that lends itself to a scientific inquiry.

2.2.2. The Process of Strategic Management

The literature of strategic decision process (Andrews, 1971; Ansoff, 1965; Mintzberg, 1973; Nutt, 1976; Quinn, 1980) has been dominated by two alternative approaches. Following Fredrickson (1983), these are referred to as the synoptic and incremental models.

Synoptic models assume a rational approach to strategic decision-making. Strategy formulation is characterised by comprehensive analysis aimed at an entire strategic problem. Strategic goals and methods are sequentially identified. Choice among alternative methods is based on their contributions to goal attainment. Strategy formulation is followed by a distinct implementation phase that involves a variety of administrative tactics (Nutt, 1987).

Conversely, **incremental** models portray strategic decision-making as a rational but action-oriented, reiterative process. This view is grounded on three assumptions: (1) that decision-makers have a limited capacity for processing information (Lindblom, 1959; Hrebiniak and Joyce, 1984), (2) that organizations are political entities (Narayanan and Fahey, 1982), and (3) that strategy often results from autonomous initiatives at operational levels of the organization (Burgelman, 1983). Strategy formation occurs in a piecemeal fashion through a series of limited comparisons between alternative actions and the status quo (Lindblom, 1959). Actions are chosen that satisfy a specific remedial need, that clear political hurdles, and that can be rationalized to fit top management's concept of corporate strategy (Narayanan and Fahey, 1982; Burgelman, 1983).

Whether the model is synoptic or incremental, strategic process theories generally identify a sequence of decision-making stages. Synoptic models describe a set of cognitive activities that include goal identification, alternative generation, analysis, evaluation and choice (Andrews, 1971). Incremental models portray the process in more political and behavioural terms (Quinn, 1980; Narayanan and Fahey, 1982; Burgelman, 1983). Narayanan and Fahey (1982), for example, describe a political

process composed of five stages: activation, mobilization, coalescence, encounter and decision.

Pure synopticism and incrementalism are theoretical extremes that "*form the poles of a continuum along which we would expect real-world strategies to fall*" (Mintzberg and Waters, 1985; p.257). Both Fredrickson (1983) and Mintzberg (1973) observe that organizations "*mix modes*" of strategy-making. Fredrickson (1983) argued that organizations use elements of both synoptic and incremental processes in a single decision. In addition, Fredrickson and Mitchell (1984) suggested that strategic decision processes are organization-level phenomena that persist as organizations change and evolve. Thus, an organization may be said to have a synoptic or incremental approach across a range of strategic decisions.

Fahey (1981), detecting inter-relationships between the two perspectives on strategy-making, concluded that, in its early stages, predominantly political behaviour occurs and that for many individual decisions the evaluation and selection phase (the choice among alternatives) may be of less significance than the search for and development of solutions. Specifically, it is characterized by a high degree of uncertainty; the criteria applied to the selection of alternatives at the early phases of a decision process are of a "*soft*" nature (perceptions of higher management level reactions, incongruity with technological capability, etc.); they are often not explicated or expressed in the open but they can be just as significant as those applied to the alternatives that survived.

In the same vein, Anderson (1983) emphasized the social character of a decision-making process as opposed to the information processing view which considers decision-making as an intellectual act, in which goals are identified, alternatives sought, consequences predicted, alternatives evaluated and choices made. He notes that since managers spend the bulk of their time in face-to-face meetings and information is couched in the form of arguments supporting a course of action, then decisions become signs and symbols to the members of the organization.

Anderson's major research finding was that decision-making processes revealed three notable characteristics: alternatives of non-competing courses of actions stimulate arguments, that lead to the discovery of the goals (or constraints that should be considered in parallel with the global goal) which then influence the choice of alternatives. He called this process "*decision-making by objection*" and noted that decision makers concern is rather with avoiding failures (making matters worse) than with achieving successes (solving the problem). This finding is similar to that of Hickson et al. (1986) who stressed that many strategic decisions are not so wide-open to alternatives. They defined this process as "*quasi-decision-making*" and noted that a lot of decisions are "*simple-minded*" in so far as all sorts of more speculative alternatives

are not attended to , and a comparative few which are not so different to what has been done before are weighed up.

Bourgeois and Brodwin (1984) developed five process approaches to advance the art of strategy implementation. There is the "*commander*" model which contains a strong centralized direction in which a single leader takes forward both formulation and implementation processes. The "*change*" model deals explicitly with strategy implementation and stresses how structure and systems can be used to facilitate the execution of strategy. The third approach refers to group decision-making at senior levels and involves top management in the formulation process to secure commitment; this is called the "*collaborative*" model. The "*cultural*" model describes the process by which strategy is implemented through the infusion of a corporate culture throughout the organization. The final approach examines strategy issues using the principal/agent model and draws on managers' natural inclinations to want to develop new opportunities as they see them in the course of their day-to-day management. Since this involves "*growing*" strategy from within the firm this model is called the "*crescive*" model.

In addition to the rationalistic and incremental views of strategic management, **Johnson (1987)**, commending on the rationalistic model of strategy decision-making, noted its inefficiency to addressing such issues as the interaction of managers and stakeholders in the location and definition of strategic problems and the management of strategic change at an inter-personal level. He identified a third category, i.e. the interpretative view, in which strategy is seen as the product of individual, or collective, sense-making about the organization and the environment in which it operates. Here the emphasis is not so much on rational analytic interpretation of complexity as on the cognitive and symbolic bases of interpretation that characterize the lived world of managers.

2.2.3. Strategic Management in Public Enterprises

State owned enterprises have often been plagued with low profitability and accused of inefficiency. On the other hand, they usually represent a significant portion of a country's economic activity. In 1987, nationalized industry accounted for some 5.5 per cent of total U.K. output employing around 800.000 people, just under 4 per cent of total employees. In Greece, in 1989, the public sector accounted for almost 9 per cent of the country's economic activity.

Researchers have stated several reasons explaining why, in terms of strategy management, public enterprises have distinct features from the private ones. In public-sector enterprises, managers are often expected to satisfy higher expectations than in private firms, and the government has a greater say than shareholders do in private firms. At the same time, managers are subjected to multiple fuzzy goals, reflecting

divergent economic and non-economic objectives, stated and pursued objectives (Aharoni 1986).

In their studies of decision-making in public and private firms, Hickson et al. (1986) found that governmental influence on the firms was surprisingly weak and much lesser than the influence exerted by customers or clients. They argued that this was the *"symptom of government"* in a pluralistic society *"wrestling with a recalcitrant economy whose decision-makers do not leap to do its bidding"* (p.67). Yet, they noted that even though government does not exert a greater amount of influence (than that exercised on private firms) on any one decision, it exerts influence on more decisions. They also noted that government is most effective in this form of influence when its departments and agencies intervene in particular circumstances beyond the usual run of subsidising and regulating.

Hafsi and Thomas (1986) argued that the study of the strategic decision-making process in larger firms of the private sector does not mention the owners as significant actors except in rare and unusual circumstances; in any case their intervention is mostly indirect, fragmented and generally ineffective. Moreover, the environment is reduced to its technical-economic dimensions, and intervenes in the process in a highly impersonal way as a set of constraints for the technical-economic definition of the decision-making process. However, they argued, in the cases where the government is the prime owner, in most cases, major decisions made cannot be understood without studying what happens in the firm's global environment, i.e. the political, social, as well as technical-economic. Yet, they found that, generally, processes that take place inside the firm and those that take place at the boundaries of the firm (i.e. with the representatives of its relevant constituents and of government) tend not to mix. Therefore, to be able to capture the overall process of strategic decision they used a framework that included and integrated, yet distinguished, both the core process and the boundary process.

Aharoni (1980) highlighted the important effects of *"social pressures"* on the decisions and argued that the political relationships of the firm's managers with the relevant actors of their environments may be, in some cases, much more influential than the dominant *"rational"* culture would drive us to believe.

Smith, Ring and Perry (1985), reviewing strategic management in US public and private organizations, noted that the difficulty of public sector strategic management is such that, whilst likely to be found inadequate in private sector terms, when judged against standards grounded within the public sector different conclusions may be drawn. For them, public service managers experience more ill-defined policy directions than their private sectors equivalents, greater constraints on their actions caused by greater

openness in decision-making, more direct and sustained contact from interest groups seeking to influence them, and more artificial time constraints on their actions.

Biggart (1977) studied the process of organizational change in the US Post Office Department. Biggart asserted that it is only in the birth of a new organization or in a reorganization of revolutionary proportions that routine survival processes are revealed fully. The newly restructured organization faced with attack in its unstable youth, retaliated by destructive actions against what it perceived to be the most debilitating aspects of the former organization: the formal structure, the ideology, the leadership, the opposing alliances and the power bases. Destruction took place at the same time as the new organization was engaged in the constructive activities of creating new work methods, building new facilities, developing technological improvements and creating alliances.

Other researchers studied the managers' role in a public sector setting. **Ackroyd, Hughes and Soothill (1989)** pointed out that public services exhibit similarities which are so sufficient that they help create a relatively homogeneous group, where management style revolves around the residual role of defending customary forms of provision rather than securing major change.

Finally, there are researchers that attempt to overcome the debate that public and private sectors are so distinct that only different theories may pertain to them. In the British context, **Pettigrew et al. (1992)** identified at least three possible sources for commonality between private and public sector firms which could underpin the development of a more generic approach. Thus, (1) there are some more generic issues such as human resource management which are important in both sectors; (2) there are also forces in the general political-economical context that trigger changes in structures in both sectors; and (3) there are common managerial/organizational processes and competencies such as strategy making, networking and political skills. As **Pettigrew et al. (1992)** noted *"there is both an intellectual challenge to link these possible sources of commonality together and a pragmatic one of building the capacity to manage particular changes involving these three elements"* (p.13).

2.2.3.1. Managerial Orientation

Within most public-sector organizations, the lack of trust and confidence in managers at lower levels prevents senior management from decentralizing power and authority. As many transactions between a public firm and its constituents are of an obligatory or social welfare nature, the absence of a market mechanism to assess managerial behaviour inhibits the setting of performance criteria. Consequently, a market form of control is replaced by a bureaucratic one, characterized by vertical lines of responsibility and

strong hierarchical control over decision-making. In the bureaucratic form, managers are held accountable for the performance of their subordinates; however, without the objectives of a market mechanism, subordinates' performance is difficult to measure, is subjective at best, and at worst arbitrary, political and capricious (**Hrebiniak and Joyce, 1984**). As a result, in many of these organizations, there is an unwillingness to delegate too much autonomy to subordinates.

2.2.3.2. Distinction between Planning and Control

Young (1988) asserted that, while *planning* is analytically complex (gathering appropriate data, thoroughly analyzing them, assessing benefits and costs, occasionally quantifying some inherently non-quantifiable benefits, ordering priorities, imposing political realities, considering funding constraints), *control* in public firms is much more difficult than planning itself. Control involves the sense of implementation and the need for action, ensuring that the organization is accomplishing its objectives (through plans) or, if necessary, changes the plan or the budget in accordance with environmental or other realities. Especially when these realities refer to unique external, political influences and/or interventions that deprive managers of authority and incentives, then the issue of control coincides with managerial abdication of responsibilities (**Allison, 1983; Seidman and Gilmour, 1986; Rainey, 1989**).

2.2.3.3. Absence of Market Forces

Young (1988) noted that the presence or absence of legislative (and in particular budgetary) support of a given organization is frequently conditioned by factors that lie considerably outside that organization's control and are largely dictated by the public's needs and wants, and the extent to which these needs and wants are communicated to legislative representatives. If this does not happen, then legislative bodies that make funding decisions may severely curtail budgets, even of efficiently and effectively ran organizations, because of other priorities. As **Young (1988)** argued, legislative priorities do not necessarily coincide with organizational effectiveness.

2.2.3.4. Barriers to Management Development

Banner (1988) recorded the constant obstacles which are specific to public administration and which always resist the attainment of optimum performance. First, public officials are neither paid nor promoted on a performance basis; nor are they dismissed for non-performance. Second, centralization of decision-making precludes any kind of personal responsibility ethic. Third, the dependence of public administration on clients and politicians militates against clearly defined objectives and hence against effectiveness.

2.2.3.5. Control Philosophy

Young (1988) pointed out that control philosophy within public firms appears to suffer in three respects: (1) public sector managers have limited knowledge of the concepts of management control and the ways in which management control systems can be designed to assist them in attaining their firm's objectives; (2) there are not rewards associated with control; though there are encumbrances prohibiting them from spending in excess of the budgetary levels they have been allocated, there are no rewards associated with less spending when accomplishing a given set of objectives; and (3) there is adherence to budgetary-line items instead of measurement of results or the achievement of goals.

Rainey (1989) argued that there is no well documented managerial theory regarding public enterprises; even the meaning of what is public management is often debatable. He pointed out to the lack of empirical studies in the field and argued that public management research is important for three reasons: (1) there are too many managers in these firms who abdicate their managerial responsibilities due to administrative constraints and interventions; (2) public administration literature is too much preoccupied with political processes and philosophical issues and pays too little attention to management; and (3) there are conflicting views in the evidence concerning the role of public managers.

Aharoni (1986) notes that government controllers often do not have sufficient information to control these enterprises effectively. As a result, control of state-owned enterprises has often been *ad-hoc* and inefficient, reflecting parochial interests and not necessarily the interests of the state-owned enterprises.

2.3. STRATEGIC CHANGE

2.3.1. Introduction

Theories of strategic management increasingly reflect the focus on organizational change (**Galbraith and Kazanjian, 1986; Lorange, Scott Morton and Ghoshal, 1986**). Empirical research, however, appears to have become more and more preoccupied with cross-sectional designs that examine the synchronic rather than the dynamic aspects of organizational strategy (**Galbraith and Schendel, 1983**). The difficulties of conducting large-scale, hypothesis-testing longitudinal research, and the relative ease of access to "static" data bases, have exerted an important influence on this trend. **Pendleton, Warren and Chang (1980)** pointed out that measurements of change and formations of

longitudinal designs have opened up a "*Pandora's Box*" of dispute and controversy among social scientists because they challenged conventional practices and assumptions. With regard to the measurement of strategic change, **Snow and Hambrick (1980)** raised a controversial question: "*At what point does an organizational response to environmental change represent a change rather than an adjustment in strategy?*"

Ginsberg (1988) argues that, partly because of such conceptual and methodological issues, research findings on changes in strategy have not evolved into a coherent body of knowledge. Thus, it is not clear that widespread premises, such as the assumption that astute executives alter their firms' strategy to capitalize on environmental opportunities, are supported by empirical evidence. Any attempt to provide a shared understanding of the scope and findings of research on changes in strategy should first clarify what is meant when referring to such changes.

2.3.2. The Meaning of Strategic Change

According to **Ginsberg (1988)**, by definition, "*change*" involves becoming different in some particular. However, the "*particular*" that must become different for an organizational change to be defined as strategic is a subject of some controversy. The "*particulars*" that become different when a strategic change occurs have been described both in terms of the **content** of strategy, i.e. the specifics of what was decided in terms of goals, scope, and/or competitive strategies, and in terms of the **process** of strategy-making, i.e. the enduring norms that reflect an organization's overall approach to managing its relationship with the environment. In contrast to the single-loop learning reflected by changes in content, changes in process reflect double-loop learning (**Argyris, 1976**). Not surprisingly, questions about whether or not such changes are strategic evoke debate.

Ginsberg (1988) has shown that, in discussing strategic change as a change in strategy content, authors have focused on shifts in both corporate- and business-level strategy. Those focusing on changes in corporate-level strategy define strategic change as a realignment of a firm's selection of product/market domains and allocations among them (**Ansoff, 1965**). Those focusing on changes in business-level strategy define strategic changes as alterations in competitive decisions within particular product/market domains, e.g. alterations in price, or quality associated with a product (**Rumelt, 1974**).

In discussing strategic change as a change in strategy-making process, researchers have focused on shifts in formal management systems and structures as well as transformations of organizational culture (**Ansoff, 1979; Tushman and Romanelli, 1985**). According to this view, unless the organization modifies its overall orientation to

the environment in a way that substantially alters the strategy-making process, it has made a strategic adjustment rather than a strategic change. As argued by **Snow and Hambrick (1980)**, *"the distinction between change and adjustment may be subtle, but it is important to theory building. If most or all domain and structural changes are regarded as strategic changes, then theories can only be fragmented and ephemeral. But if these same modifications are viewed as adjustments, researchers can then look for consistencies in how an organization interacts with its environment"* (p.529).

Ginsberg (1988) argues that although Snow and Hambrick's point is strong, accepting a definition of strategic change that is more narrow than prevailing definitions of organizational strategy which include both content and process approaches (**Bourgeois, 1980; Ginsberg, 1984**) seems unnecessarily restrictive. Moreover, fundamental shifts, or strategic reorientations, may occur incrementally as changes in strategy context (**Quinn, 1978**). Since they often result from the ordinary workings of day-to-day processes, such shifts are often not discovered to be fundamental until after they have taken place (**Pondy and Huff, 1985**). Hence, as **Mintzberg (1988)** has pointed out, whether an organizational change is defined as strategic or not *"depends not only on where you sit, but when you sit: what seems tactical today could prove strategic tomorrow"* (p.17).

2.3.3. Classifying Changes in Strategy

According to **Ginsberg (1988)**, since the term *"strategic change"* evokes unresolvable controversy regarding the importance of the change that occurred, it may be less confusing and more useful to refer to *"changes in strategy"* rather than strategic changes. If this term is used then one is directed to classify changes in terms of the way he or she defined strategy, and may in turn examine the consistencies within and across investigations of different types of change. By explicating and using the various definitions of strategy that can be found in the literature, we can eliminate much of the confusion in the field that stems from contradictory and ill-defined uses of this term (**Mintzberg, 1988 p.20**).

Various definitions of the term *"change in strategy"* can be better understood if they are classified along two fundamental dimensions (**Ginsberg, 1988**):

The first dimension distinguishes between conceptualizing strategy (1) in terms of a position that is reflected in the choices of product/market domains or competitive advantage through which firms define their relationship to the environment (**Bourgeois, 1980**), or (2) in terms of a perspective that is reflected in the integrated sets of ideas through which problems are spotted and interpreted and from which streams of decisions flow (**Hedberg and Jonnson, 1977**). While those who define strategy as a position look outward, seeking to locate the organization in its external environment, those who define

strategy as perspective look inside the organization, seeking to understand the "*collective mind*" (often referred to as "*culture*", "*ideology*", or "*paradigm*") that shapes the organization's enduring relationship with its environment (Mintzberg, 1987).

The second dimension distinguishes between conceptualizing change as (1) changes in degree or magnitude (e.g. Miller and Friesen, 1983), or (2) changes in state or pattern (e.g. Galbraith and Schendel, 1983).

2.3.4. Forces Influencing the Occurrence of Change

Ginsberg (1988) argues that like other kinds of organizational changes, shifts in strategy occur when forces creating pressure for change overcome forces that create resistance to change (Bigelow, 1982; Lundberg, 1984). However, changes in strategy primarily reflect the decisions of General Managers to respond to changes in environmental threats and opportunities. These decisions may result either from intentional rationality and learning or from mimetic processes (Singh, House and Tucker, 1986).

The question of how often firms tend to undergo changes in strategy is rooted in a central debate in organizational theory regarding the relative influence of inertial forces, environmental feedback or feedforward, and strategic choice on activity patterns over time (Romanelli and Tushman, 1985). The predominance of inertial forces in organizations may explain the observation that periods of changes in magnitude tend to be interspersed with periods of discontinuous changes in pattern (Mintzberg and Waters, 1982; Tushman and Romanelli, 1985). Nevertheless, the frequency and duration of different types of changes may vary across different external and internal conditions or environmental changes. As Mintzberg and McHugh (1985) have observed, cycles of incremental and revolutionary changes in strategy appear to be of shorter duration in some organizations and more balanced between change in magnitude and change in configuration, while in others they are of longer duration with an emphasis on changes in magnitude that are interrupted by occasional, brief, and disruptive changes in direction or gestalt.

This relationship between pressures for, and resistance to, changes in strategy is a function of the General Managers' continual need to minimize two kinds of costs: those of being mismatched with the economic and socio-political environment, and those of changing to avoid this mismatch (Miller and Friesen, 1984). Hence, the appropriate nature of change can only be decided with reference to a particular set of internal and external conditions that determine the outcomes of decision-making processes (Friesen and Miller, 1986). Whether they encourage or block changes in strategy, external and internal forces provide answers to three fundamental questions:

- Is there something wrong with the current strategy?
- Is there a need for a new strategy? and
- Does the organization have the resources to implement a change in strategy?

Therefore, from the perspective of organizational adaptation, the central question regarding changes in strategy is with identifying and explaining the key external and internal variables and associations which characterize the forces which either signal disequilibrium in the firm's behaviour or stimulate movement toward more effective and efficient behaviour (**Ginsberg, 1988**).

Changes in the firm's external and internal environment may increase both pressures for and resistance to change. Performance outcomes may influence changes, by providing feedback that indicates whether or not the current strategy is effective or efficient. Since performance outcomes may increase resistance to change if they are either exceedingly poor or exceedingly good, it is likely that they will create the greatest pressure for change when they are at intermediate levels (**Fombrun and Ginsberg, 1986**).

Fombrun and Ginsberg (1990) argued that a strategy crystallizes from the longitudinal deployment of a firm's resources over time. As such, strategy represents the cumulative effect of the year-to-year allocations made by a firm to such functional uses as marketing, manufacturing, and R&D. Once initiated, resource allocations have two consequences. On the one hand, inertial forces emerge as firms grow larger and commit to a course of action (**Aldrich, 1979**). These organizational-level forces act as **inhibitors**, i.e. they reduce a firm's flexibility in deploying its resources. On the other hand, previous performance and environmental uncertainty also play a feedback role: they act as **inductors** in triggering changes in organizational activity patterns (**Cyert and Marsh, 1963; Pfeffer and Salancik, 1978**). Hence, inhibiting forces and inductive forces both influence the longitudinal deployment of corporate resources.

2.4. STRATEGIC DECISIONS

According to **Pettigrew (1973)**, one of the most general statements that can be made about the theories of organizational decision-making is that they fall into two broad classes: (1) Normative mathematical-economic theories, and (2) Behavioural theories.

It is the second of these two approaches that he examined. The interest here is in tracing decisions empirically to find out what actually happens rather than what is ideally

expected to happen. In this connection, the work of **March and Simon (1958)** and **Cyert and Marsh (1963)** offers the most material assistance. In spite of its interdisciplinary aims, the main point of **March and Simon (1958)** is that the interrelation of motivation and cognition must be of central concern for organization theory.

Pettigrew (1973) considered the organization as an open political system. The division of work in an organization creates sub-units. These sub-units develop interests based on specialized functions and responsibilities. Although such sub-units have specialized tasks, they may also be interdependent. This interdependence may be played out within a joint decision-making process. Within such decision-making processes, interest-based demands are made. Given heterogeneity in the demand-generating process and the absence of a clearly set system of priorities between those demands, conflict is likely to ensue. Sub-units with differential interests make claims on scarce organizational resources. The extent of the claims is likely to be a reflection of the unit's perception of how critical the resources are to its survival and development. The success any claimant has in furthering his interests will be a consequence of his ability to generate support for his demand.

It is the involvement of sub-units in such demand- and support-generating processes of the organization that constitutes the political dimension. Political behaviour is defined as behaviour by individuals, or, in collective terms, by sub-units, within an organization that makes a claim against the resource-sharing system of the organization.

In his recent work concerning the management of strategic change in both the private and the public sector (**Pettigrew, 1985; Pettigrew and Whipp, 1991; Pettigrew et al., 1992**) he enhances his earlier view and addresses a processual (an emphasis on action as well as structure), contextual (operating at a variety of different levels with specification of the linkages between them), historical (considering the evolution of ideas and stimuli for change), and pluralist (a description and analysis of the often competing versions of reality seen by main actors in the change process) design for studies of organizations.

2.4.1. Characteristics of Strategic Decisions

Strategic decisions are concerned with: (1) the scope of an organisation's activities; (2) the matching of an organization's activities to its environment; (3) the matching of the activities of an organization to its resource capability; (4) the allocation and re-allocation of major resources in an organization; (5) the values, expectations and goals of those influencing strategy; and (6) the direction an organization will move in the long-term. Implications for change throughout the organization are therefore likely to be complex in nature (**Johnson and Scholes, 1988**).

According to Nutt (1984) considerable work in decision-making has been directed towards the development of normative processes (Churchman, 1979; Ackoff, 1981; Mason and Mitroff, 1981). Somewhat less attention has been directed toward how managers go about making decisions. A few key studies provide touchstones.

Soelberg (1967) divided the decision process into equal increments and studied the type of activity in each increment, finding that most of the activity took place at the beginning and the end of the process.

The Cyert and Marsh (1963) studies showed how managers imposed their views on the process. Alternatives were pruned according to their conspicuousness and the clout of their proponents, not according to expected differences in performance.

Mintzberg, Raisinghani and Theoret (1976) classified patterns found in decision processes. They called the key phases recognition, diagnosis, development (in the form of design or search) and selection (comprising choice procedures and authorization). The design and search steps were used to create custom-made and modified solutions, to identify a ready-made solution and to sanction a fully developed solution that was available when the process began. This study made a major contribution by identifying key phases of decision-making and external factors that influence the process. However, a twenty-five-case data base was too limited to probe more subtle characteristics such as sub-phases and tactics. As a result, Mintzberg, Raisinghani and Theoret (1976) concluded by noting that little is known about how managers engage in the critically important activities of diagnosis and solution development. More studies with larger data bases that deal with a new set of topics are needed, in order to understand and appreciate the decision processes used in organizations.

Nutt (1984) used an approach called "*process reconstruction*" to identify process types. Multiple case studies of projects were profiled using interviews that identified critical events, determined the sequence of these events and fit the events and their sequence to a generic representation of activities thought to be essential in decision-making. Common patterns in these cases were content analyzed to determine how decision-making was conducted in organizations.

Grandori (1984) defined five decision models and specified the domains of their applicability in terms of uncertainty about cause and effect relations and conflict of interests; They were: (1) optimizing, (2) heuristic (satisficing), (3) incremental, (4) cybernetic, and (5) random. She used a set of procedures that allowed conditions of uncertainty to be dealt with. Choice rules were associated with the way alternatives were generated; search rules produced acceptable rather than optimal solutions; learning rules

referred to a *posteriori* rationality that linked outcomes and objectives in a way that was an alternative to a *priori* or "*calculated*" rationality. Grandori noted that these models had domains of applicability that were included in one another. Thus, a *random* strategy was always feasible, while a *cybernetic* one required that observable relations should be defined between actions and outcomes. An *incremental* strategy required that the decision makers should define at least one attribute for comparing an alternative course of action with the existing one, and a *heuristic* required that the decision makers should define aspiration levels that an alternative must satisfy. Finally, an *optimizing* strategy necessitated that the decision makers were able to compare all relevant alternatives, considering all relevant attributes.

2.4.2. The Psychological Context of Strategic Decisions

According to Bateman and Zeithaml (1989) managerial decisions are made by individuals or groups that confront an array of situational and psychological influences; they are not impersonal or isolated events. The decision-making process is dependent not only on objective information and rationality but also on decision makers' cognitions about the world (Mitchell, Rediker and Beach, 1986; Simon, 1976; Weick, 1979). Moreover, each managerial decision typically is an episode in a series of decisions. Organization strategy, for instance, arises through a stream of decisions and reflects an aggregate pattern of behaviours that occur over time (Fredrickson, 1983). This view indicates that in many instances strategy represents a composite of sequential decisions and leads Fredrickson (1983, p.571) to recommend that strategic process researchers should "*adopt a decision-making perspective (as opposed to a planning one) and concentrate their efforts on developing and utilizing methodologies that study how organizations make and combine individual strategic decisions*". This perspective was further supported by the theoretical arguments of Mintzberg (1978), Quinn (1980) and Bourgeois (1980) who treated strategy formulation as a decision-making process.

Bateman and Zeithaml (1989) attempted to build on this view of strategic formulation process as a series of decisions by developing and testing a model of contextual influences on strategic decisions. The model rested on two related assumptions:

- (1) The model adopted an incremental perspective of strategy formulation. Strategic decisions are not discrete and independent of one another; rather they represent steps in an overall process designed to move the organization further toward a goal or set of goals embraced by the strategic decision makers.
- (2) Strategic decisions are shaped by a variety of contextual influences arising from past events, presents circumstances and perspectives on the future. For example, most decisions are embedded in a history (March 1981; Mitchell, Rediker and

Breach, 1986; Neustadt and May, 1986), and strategic decision-makers themselves have experienced success or failure with past decisions. Furthermore, decision-makers must examine current issues facing the firm such as organization resources and the competitive environment. Finally, strategic decision-makers usually consider their goals and those of the organization, as well as their subjective evaluation of the future.

Thus, a given strategic decision is typically an episode in a series of incremental decisions that constitute the strategy of the organization. Like human behaviour in general (**Lewin, 1951**), strategic decisions are influenced by forces and events in the past, the present, and those anticipated in the future. These forces and events combine to create the psychological context for each decision in the overall process.

2.4.3. The Issue of Consensus

According to **Wooldridge and Floyd (1989)**, research has not demonstrated a consistent relationship between consensus in the top management team and organizational performance (**Bourgeois, 1980, 1985; Dess, 1987; Grinyer and Norburn, 1978; Hrebiniak and Snow, 1982**). This is surprising since much of the literature in strategic management has emphasized the importance of gaining consensus (**Hrebiniak and Joyce 1984; Tilles, 1963**).

Dess (1987) suggested industry context as an important consideration in the performance-consensus relationship. He hypothesized that within a fragmented, intensely competitive industry, consensus on both company objectives and competitive methods is needed. His results however did not confirm this. While consensus on objectives and consensus on means to achieve them were each moderately associated with organizational performance, the two consensus measures were not correlated as expected. In other words, each contributed to performance independently but not jointly.

2.4.3.1. The Characteristics of Consensus

Dess and Origer (1987) reviewed previous research linking consensus to performance (**Bourgeois, 1980; Bourgeois and Singh, 1983; Dess, 1987; Grinyer and Norburn, 1978**). The focus of these studies was on the degree or level of consensus among the top management team. However, there are at least two more dimensions of consensus that are particularly relevant in a process context: the scope of consensus and the content of consensus.

Scope refers to who participates in consensus. Both the strategic management and organization theory literatures support the belief that strategy is formulated by consensus

among the chief executive officer and the top management team (Ansoff, 1965; Hambrick and Snow, 1977; Thompson, 1967). Studies of organizational culture (Deal and Kennedy, 1982), the Japanese style of management (Ouchi, 1981) and incremental decision processes (Quinn, 1980), however, suggest that it is often necessary to expand consensus on strategy beyond the top management team.

The content of consensus refers to what decision-makers agree about. Consensus on means and ends, the focus of previous studies, seems relevant during the latter stages of synoptic strategy formulation (Fredrickson, 1983). In earlier stages of the process and for incremental strategy formation, consensus content may concern matters other than ends and means.

Finally, when assessing the degree of consensus, prior research has focused on consensus as shared understandings about ends and means. Consensus has been operationalized by asking top managers to describe the organization's goals (ends) and strategies (means) (Bourgeois, 1980; Bourgeois and Singh, 1983; Dess, 1987) and measuring the extent to which these descriptions agree. As Dess (1987) noted, however, consensus also includes commitment to strategy. Understanding without commitment may result in "counter effort" and negatively affect performance (Guth and MacMillan, 1986).

2.4.3.2. The Strategy Process and Consensus

As an outcome of strategy process, consensus is a function of the character of strategic decision-making. After briefly reviewing alternative process descriptions, their effects on the scope, degree, and content of consensus are traced, and research propositions that summarize likely process-consensus relationships are presented.

Dess (1987) argued that a review of the literature in strategic management reveals a lack of empirical research regarding the relationship between organizational performance and the extent of consensus or agreement among the top management team on strategy for an organization. This lack of attention to consensus among strategic decision-makers is surprising, since much of the normative literature in management has either implicitly or explicitly emphasized the importance of consensus in decision-making.

Hrebiniak and Joyce (1984) viewed strategic decision-making as a series of means-ends decisions beginning with the determination of long-term, global objectives (ends) and the development of short-term, more local actions to obtain these objectives. They developed a model that used the twin principles of limited rationality and minimum intervention by which managers are presumed (and advised) to act. Limited rationality assists in breaking down strategy into successively smaller, more actionable pieces with

shorter time frames, while minimum intervention is prescribed to cure the bias to change everything (change structure, fire people, redeploy people and assets without regard for impact, consequences or previous commitments).

Stagner (1969) among the first to investigate consensus in organizations, analyzed responses from top managers in 109 firms among the Fortune list of the 500 largest American corporations. He studied 52 pairs of respondents from within the same firms for similarities in their patterns of responses on goals and means and found the range of correlations was from +0.79 (rather high agreement) to +0.01 (no agreement at all). Although top managers of the same firm were found to agree more in their responses than were managers from two different firms, Stagner did not relate his findings to performance.

In a laboratory study of the strategic decision-making process, **Whitney and Smith (1983)** concluded that in the strategic decision-making process, normative pressure to arrive at a consensus is likely to lead to decisions which are suboptimal to the organization.

Grinyer and Norburn (1978) investigated the relationship between consensus on organizational goals and performance. They found that for the highest performing firms, consensus on goals was negatively related to performance. Similar findings were obtained in a study of consensus on alternative means for obtaining goals in 168 Belgian firms (**De Woot, Heyvaert and Martou, 1978**).

Hrebiniak and Snow (1982) examined the relationship between organizational performance and top managers' agreement on the strengths and weaknesses of their firm. They found a positive relationship between measures of organizational performance and consensus among top managers on the strengths and weaknesses of the firm.

Bourgeois (1980) conducted the first empirical study which simultaneously studied both consensus on goals and consensus on means and their relationship to performance. He found that consensus on both ends and means did not yield the highest firm performance. Instead, the highest-performing group had consensus on means but not on ends. However, further analysis of the same data (**Bourgeois and Singh, 1983**) revealed that the presence of slack resources in the environment seemed to promote goals consensus among top managers.

2.5. COGNITION AND INTERPRETATION OF THE PROCESS OF CHANGE

2.5.1. Organizations as Interpretation Systems

Daft and Weick (1984) studied the interpretation behaviour of organizations. Based on the assumption that "*the environment is not only there waiting to be discovered*", they developed a four-category classification scheme. They used two dimensions: (1) the assumptions about the environment, i.e. whether it is analysable or not; and (2) the type of organizational intrusiveness into the environment, being either passive or active. Thus (p.228):

- The *enacting* mode reflects both an active, intrusive strategy in an un-analysable environment; the organizations construct their own environments and are highly activated.
- The *discovering* mode represents an intrusive organization, looking for a correct answer in an analysable environment.
- Organizations assessed as *conditioned viewing* assume an analysable environment but are not intrusive. They develop interpretations based on traditional boundaries and they perceive the environment as objective and benevolent.
- *Undirected viewing* is a similar passive approach but here the organizations do not rely on hard objective data because they see the environment as un-analysable. Managers act on limited soft information to create their perceived environments.

2.5.2. How Managers Construe Key Events

Among the most challenging events to which organizations must respond are those that become the contexts for substantial change and adaptation. According to **Isabella (1990)**, these events are rarely static or contained within a discrete time frame. Unfolding over time, they demand continual adjustment and present unending challenge for all concerned. Although many studies have elaborated upon the concrete and observable behaviours and actions connected with these changes, few have tried to identify and understand the interpretations and cognitions associated with them. Recent research on selected changes (**Bartunek, 1984; Gephart, 1984; Sutton, 1987**) and the literature on organizational change reviewed by **Van de Ven (1980)** have suggested that a substantial amount of cognition and interpretation accompanies the process of change:

"Transitions are themselves transitional. As they evolve, different emphases on a different combination of values and assumptions may be required. When a change is initiated, existing patterns are disrupted and this results in a period of uncertainty and conflict. If key people accept and support the change, novelty turns to confirmation and eventually the innovation is routinized. As the process unfolds, managers are required to take on different orientations and styles " (Quinn and Kimberly, 1984; p.303). The same amount of cognition and interpretation may in turn influence organizational outcomes, decision-making, strategy or structure (Daft and Weick, 1984).

In other words, as a change unfolds, different assumptions and orientations are required at different times in the process. Managers involved in a change need to undergo an alteration of their cognitive structure that facilitates and supports the need to change, the process of changing, and the maintenance of what has been changed. The frame of reference, i.e. the perspective through which people view an event, shifts (Starbuck, 1976).

The precise nature of these different and changing managerial cognitions and interpretations, however, has yet to be fully explicated. Although researchers have suspected the cognitions shift, no one has revealed a pattern associated with the change process. Some authors have suggested that understanding the cognitive basis for responding to change would enhance the effectiveness of organizational responses (Gioia, 1986).

Strategic-level managers formulate the organization's interpretation. Even if managers may not agree fully about their perceptions, the thread of coherence among them is what characterizes organizational interpretations. Weick (1979) advocated that meaning is always given to actions after they are completed. Criticizing the preoccupation of people in organizations with planning, forecasting and predicting, he noted that organizations formulate strategy after they implement it, not before, because meaning is imposed after elapsed actions are available for review. Other researchers argued that in the absence of shared meaning, organized action is made possible by socially shared repertoires of communication mechanisms (Donnelon, Gray and Bougon; 1986). They noted that group members use these repertoires of communication behaviours while in the process of developing equifinal meanings for their joint experiences. Thus, organized action does not require that the meaning held individually by members be coincident; equifinal meanings are sufficient.

Attempting to explain differences in interpretations, Isabella (1990) developed a model that accounted for managers' interpretative tasks. She noted that the culmination stage is the one within which reconstruction occurs. Managers are actively reconstructing their

environments by deciding what to retain and/or what to alter. At this time, more than ever, there could conceivably be varied and multiple individual realities and divergent interpretations as individuals attempt to make sense of the changes experienced.

Weick (1983) noted that within the interpretative perspective strong emphasis has been placed on the cognitive theme, that is the brain's capacity to store and process information and the associated behaviour -whether it is rational, intuitive or creative. He argued that cognitive schemes and environmental stimuli should be seen as inter-twined concepts; action (in terms of decision-making) is the interpretative scheme (the mediating concept) by which thinking processes are created and reconfirmed.

Other researchers define interpretative schemes as the set of assumptions and beliefs which form part of the organizational culture. They are held relatively commonly throughout the organization and usually are taken for granted. They can be found in the stories of organizational history and in the explanations of events. They help managers make sense of the situation they are faced with and provide a basis for formulating strategy (**Pettigrew, 1988**).

The recipe (another term of interpretative schemes) is something more than the set of beliefs and assumptions. It is something embedded in an organizational specific cultural web which comprises the power structure, the organizational structure, routines and control systems, rituals, myths and symbols. They emphasized the need for the strategist to understand what beliefs and assumptions are included in it, what mechanisms in the cultural web preserve it and how the recipe can be challenged sufficiently when perceived that it constrains the behaviour the strategy calls for (**Johnson, 1987**).

Etzioni (1975) noted that participants in a given organization differ in their orientation to this cultural system. Some, usually the elites, accept it more fully than others do and tend to represent it in their interactions with both insiders and outsiders. Others accept it partly, while others oppose to most of its elements and attempt to maintain a sub-culture of their own. It is found that in organizations the higher ranks tend to support it while other in the lower ranks vary widely in their orientation towards it.

Bartunek (1984) investigated the existence of a relationship between interpretative schemes, actions and structure. She noted that *"during a period of second-order (discontinuous) change in interpretative schemes, structural properties enter into a reciprocal relation with interpretative schemes and actions that is similar to the relationship between the interpretative schemes and actions. The actions organizational members take on the basis of their evolving understanding affect the organization's structural properties which in turn limit and/or enable the expression of particular interpretative schemes and actions based on them"* (p.366). Thus, she

concluded, structural properties, interpretative schemes and actions are all modified in interaction with each other.

Silverman (1985) used the term "*ideology*" to describe the way managers articulate concepts to justify actions and behaviour. Meaning is then derived by deciphering those articulations and the particular circumstances they apply, that is the actors that addressed them and the historical context in which they took place. However, as **Johnson (1987, p.42)** pointed out, "*whilst researchers have noted such phenomena, there is little explanation of just what beliefs and assumptions actually constitute management ideologies at an industry, organization or individual level*".

2.5.3. Tools for Research in Human Culture

Lenz and Engledow (1986) asserted that cognitive models constitute one of the five alternative models for environmental analysis that exist in research on organizational environments, the other being: (1) industry structure models, (2) organization field models, (3) ecological and resource dependence models, and (4) era models. To their view, top management's collective understanding of its environment is assumed to be embodied in a cognitive structure which comprises interconnected sets of understandings, consisting of implicit views of one's own interests, concerns and tasks. These cognitive structures serve as a context for formulating corporate strategies and are sustained by those with requisite power and influence (**Pettigrew, 1988; Lenz and Engledow, 1986**). Thus, strategies are assumed to be ways in which organizations interact with reality. Consequences of these interactions provide experiences that become inputs for organizational learning and subsequent strategic decisions.

Stubbart and Ramaprasad (1990), drawing on research in anthropology and linguistics, asserted that there are elements in these two disciplines that could be encompassed into a common agenda with cognitive science. All these disciplines are interested in knowledge that sustains a culture. Natural language and its study presents the most accessible path towards understanding human culture. They noted that cognitive science lacks any ecological facet and needs to be put back in the context of cultural thought. Thus, researchers must study cognition in a social linguistic context where historical circumstances are not ignored.

The same point is taken up by **Pettigrew et al. (1992)**; they noted that the cultural perspective on organizational change deals with a set of issues having to do with symbolism, rituals and language. In their view "*shifting language systems are themselves interesting objects of study as they provide order and coherence, describe cause-effect relationships (rationales) in times of confusion and transition and*

because there may be competing language systems trying to define the same situation in different terms" (p.22).

These two last paragraphs develop a point that this thesis embraces and around it builds the chapters that examine the board-members' rationales about strategy.

2.6. THE STRATEGIC ROLE OF BOARDS OF DIRECTORS

2.6.1. Introduction

Research on the role of Boards and the extent to which Boards undertake each role has been guided by alternative theoretical perspectives. These perspectives differ meaningfully in their views of what Board-members should do, which Board attributes influence company performance, and which criteria should be used to assess the Board's contribution to company performance. **Zahra and Pearce (1989)** identified the following three alternative theoretical perspectives of the Boards' role.

2.6.2. Theoretical Perspectives of the Boards' Role

2.6.2.1. The Legalistic Perspective

According to **Zahra and Pearce (1989)**, the **legalistic approach** suggests that Boards contribute to the performance of their firms by carrying out their legally mandated responsibilities. Advocates of this approach posit that corporate laws vest considerable powers in Board-members to enable them to fulfil their roles. According to this approach, Boards are responsible for corporate leadership without actual interference in day-to-day operations, which are duties of the General Manager. The role of the Board is viewed as including responsibility for selecting and replacing the General Manager, representing the interests of the firm's shareholders, providing advice and counsel to top management, and serving as a control mechanism by monitoring managerial and company performance (**Nussbaum and Dobrzynski, 1987; Carpenter, 1988; Brown, 1976; Mueller, 1979; Vance, 1983**). Thus, by performing these activities, Boards can enhance the performance of their companies.

The legalistic perspective posits that Board attributes (i.e. composition, characteristics, structure and process) determine a Board's performance of its two primary roles: service and control. Service role involves strengthening company reputation, establishing contacts with the external environment and giving counsel and advice to executives (**Carpenter, 1988; Loudon, 1982**). The control role requires evaluating both, company

and General Manager's performance to ensure corporate growth, protection of shareholders' interest and greater corporate accountability (**Chapin, 1986; Loudon, 1982; Glaberson and Powel, 1985**).

Performance of the two Board roles of service and control depends on two factors. The first is ownership concentration. If company stock is held by a small number of owners, these owners or their representatives on the Board are likely to be actively involved in performing the control and service role. These individuals will have a vested interest in ensuring the survival and effectiveness of their firms, to maximize their wealth. The second contingency is firm size. In smaller firms, Boards tend to be manipulated either by the owners or General Managers. (**Castaldi and Wortman, 1984**). However, these Boards can play a major service role that enhances a firm's legitimacy. As firms become bigger, the control function becomes vital. Large organizational size is often associated with complex operations that require careful integration. As a result, a Board becomes a major instrument of control as companies become larger.

Research following the legalistic approach suggests that Board attributes influence Board roles. The effect of Boards on company performance, however, is indirect. By performing their service and control roles, the Board-members shape managerial strategic choices or actions. According to this perspective, a Board is not expected to initiate strategies or develop policies. Instead, it is responsible for reviewing and approving managerial initiatives that will, in turn, determine company performance.

According to **Zahra and Pearce (1989)**, the legalistic perspective adopts a broad view of organizational performance, emphasizing financial, systemic and social criteria. Financial criteria relate to creating shareholders' wealth. These are usually measured using accounting-based performance measures, such as return on assets, return on equity, and dividend per share (**Vance, 1978**), and market-based criteria. Systemic performance criteria centre on a firm's survival and growth (**Daft, 1989**). Social performance revolves around corporate response to changing societal expectations. **Zahra and Stanton's (1988)** study reported positive association between the proportion of outsiders on the Boards and measures of corporate social responsibility.

Zahra and Pearce (1989) argue that the legalistic perspective has sparked considerable empirical research as well as public debate over the past five decades. Its findings show that Board-members do not always fulfil their legally mandated responsibilities (**Epstein, 1986; Koontz, 1967; Loudon, 1982**). Boards do not ask top managers discerning questions about company goals and performance, do not evaluate thoroughly the General Manager's performance, and do not review managerial decisions before approving them. As a result fights are spreading and shareholders suits against corporate officers and directors are increasing (**Glaberson and Powell, 1985**).

From this perspective, Boards' failure to fulfil their roles is often explained by the fact that Boards function on information provided by the General Manager (**Aram and Cowan, 1983**). Also general managers are thought to play a most significant role in director recruitment and selection (**Foster, 1982**). Accordingly, it is argued that most general managers do not want a strong Board that will challenge their power and authority. (**Rosenstein, 1987**). As a result, loyalty to the general manager, and not competence, becomes a major criterion in selecting, retaining, and compensating Board-members (**Zahra and Pearce, 1989**).

Managerial domination of Boards is seen as having resulted in inadequate attention to Board processes. Often, Board-members function on information provided by the General Manager. The flow of information between the General Manager and the Board-members is often inadequate (**Aram and Cowen, 1983**). Thus, in the absence of reliable data, Board-members are not in a position to challenge the General Manager's analyses or recommendations.

Board observers have noted that Board decision-making is also ineffective. Meetings are infrequent, short, and too superficial to result in insightful discussions of issues at hand (**Patton and Baker, 1987**). Lack of attention to effective Board process is presumed to have resulted from the fact that the majority of Boards have chairs who also serve as the General Managers, making it difficult for the Board to evaluate executive performance. Hence, the effective system of checks and balances envisioned by the legalistic approach does not exist. Counterproductive managerial domination of boards is widespread, and results in weak boards that function as rubber stamps of managerial choices (**Nader, 1984; Mizruchi, 1983**).

Researchers note that in recent years external pressures for greater corporate accountability and greater board involvement in corporate decision-making have intensified. According to them three institutional forces function as the catalysts for this change (**Judge and Zeithaml 1992**). First, because a board is a legal entity governed by law this greatly affects board behaviour and is reflected in directors' perceptions that they might be exposed to legal action if they are not involved in strategic decision-making. Second, the managers of pension funds because of funds increasing size press boards to increase their involvement. Third, the market for corporate control through hostile takeovers that remove control from incumbent executives and directors.

Other researchers suggested changes in the way Board-members should be selected, in the liability of Board-members for corporate failure, and in separating the position of the General Manager and Board chairs (**Mueller, 1979**). Reform efforts focused on the sources of Board inefficiency to transform Board-members into true partners in

governance. The debate on the role of the organization in society also stirred calls for Board reform. Widely perceived as the apex of corporate power, reform efforts aimed to broaden the representation of different stakeholders on Boards, with the desired result of enhanced corporate role by large corporations.

These factors, i.e. concern over Board effectiveness and interest in the social role of the firm, led to significant changes in Board composition and rising interest in how Boards make their decisions (**Patton and Baker, 1987**). Overall, the findings from this perspective have catered for a search for better ways to design effective Boards.

Despite the important contributions of the legalistic approach, **Zahra and Pearce (1989)** noted some shortcomings of this approach. Among them, one can cite the following:

1. First this approach has tended to ignore the important contribution Boards can make in coopting the external environment or in developing and implementing strategies.
2. Second, researchers have shown interest in composition variables without sufficient attention to Board structure and process. Thus, though normative theory emphasizes Board composition, structure and process, only composition is emphasized in empirical studies.
3. Third, as **Mizruchi (1983)** has noted, research following this tradition has been fraught with confusion about the nature of corporate control. The thesis that General Managers dominate their Boards has not been studied in a systematic fashion. Yet, most researchers start their analysis taking this assertion as a given. **Mizruchi's (1983)** own interpretation of the literature shows that Boards control General Managers and not vice versa.
4. Fourth and finally, in conducting their empirical work, scholars following this approach tend to over-emphasize the direct link between Board attributes and corporate performance criteria. The effect of Board attributes on company performance is indirect, occurring through its influence on roles. This lack of attention to appropriate causal links among Board attributes and roles may explain the contradictory findings reported in the literature.

2.6.2.2. Resource Dependence

Zahra and Pearce (1989) have noted that grounded in sociology and organizational theory, the resource dependence perspective views Boards as important boundary spanners that make timely information available to executives. Furthermore, because of

their prestige in their professions and communities, Board-members are able to extract resources for successful company operations. These activities are believed to enhance the firm's legitimacy in society and to help it achieve goals of efficiency and improved performance (**Pfeffer, 1973; Pfeffer and Salancik, 1978; Provan, 1980**).

Research by economists and sociologists on Board interlocks provided empirical support for the resource dependence perspective. These researchers viewed Boards as viable entities whose contribution lay mainly in establishing and strengthening mutually beneficial interorganizational relationships. Board-members not only provided vital links to other companies, but they also ensured favourable transactions among these firms. The net effects of these actions were increased co-ordination among organizations, reduced transaction costs, and improved access to vital information and resources (**Bazerman and Schoorman, 1983**).

Researchers in the resource dependence perspective observed that interlocks had a strong favourable effect on company performance because of the many advantages of interlocking directorates. These included horizontal co-ordination among firms along the same value chain, vertical co-ordination, and enhancing corporate reputation through networking (**Penning, 1980; Schoorman, Bazerman and Atkin, 1981**). These three advantages were viewed as having helped to reduce the uncertainty surrounding corporate operations, enhanced the status of the firm in the business community, and, on occasion, reduced transaction costs. Board-members absorb environmental uncertainty by providing information, thus enhancing company performance.

Scholars following the resource dependence perspective stressed two Board attributes as antecedents of Board roles, i.e. composition and characteristics (**Zahra and Pearce, 1989**). However, by highlighting a strategy in addition to the service and control roles, these scholars view Board roles more broadly than legalistic researchers. The resource dependence perspective suggests that Board-members may be actively involved in the strategic arena through counsel and advice to the General Manager, by initiating their own analyses, or by suggesting alternatives. However, Board-members may not develop or execute strategies because these activities are within the purview of the General Manager.

A Board's performance of its roles depends on three contingencies. The first is the nature of the external environment. When the environment is uncertain and threatening, creating favourable links with external stakeholders becomes an important part of the service role. The second contingency is the phase of company life cycle. Though the link between the Board role and company life cycle is yet to be clearly defined, Boards are expected to perform qualitatively different roles at various points of the cycle as exemplified by the different way a Board performs its control function in an

entrepreneurial firm as opposed to a well established, mature corporation. The third contingency affecting Board role is the type of firm (i.e. profit vs. non-profit). In profit-seeking firms, Board-members are held legally liable for their decisions. Hence, these Board-members may be hesitant to be actively engaged in performing their strategic role. In not-for-profit companies, however, these Board-members are not legally liable and, therefore, may become deeply involved in shaping the strategic direction of the organization (Zahra and Pearce, 1989).

Other theorists have noted that Board influence on company performance occurs through its impact on the strategic initiatives of executive choices. From the resource dependence perspective, Board-members can shape these initiatives directly by proposing new business concepts or initiating their analyses. Resource dependence scholars allude to a multidimensional definition of company performance, encompassing the financial, systemic, and social components noted under the legalistic approach. Yet, published research following this approach has stressed only the financial component of organizational performance. To capture the effect of Boards on company financial performance, scholars following the resource dependence research tradition use change measures of organizational performance (Provan, 1980; Pfeffer, 1972). These studies were designed around the theme that Boards which fit the firm's external environment or aid in absorbing uncertainty enhance company performance.

This perspective has three limitations : First, it does not define or even theorize about the processes by which Board-members develop their strategies to link the firm and its environment. Second, it ignores the dynamics of power associated with changes in Board composition and change. Boards do not just exist or match environments; rather, Boards are designed and developed to achieve this fit. By overlooking processes and individuals associated with changes in Board composition, this approach gives the impression that designing effective Boards is a simple, straightforward task. Analyses associated with testing this approach ignore the dynamic nature of organizational adaptation to environment. This task has been described as attempting to "*shoot a moving target*" (Thompson, 1967). What do changes in the firm's environment-firm links mean for Board membership and process? This question, too, has escaped examination. The limited number of studies published to date makes it difficult to determine how Board composition and characteristics vary within different environmental settings. They also fail to provide an adequate test of the perspective's central thesis that companies whose Boards meet the demands of the environment experience superior performance. Third, despite its implicit recognition of the firm's social role, this approach has failed to assess empirically the links between Board variables and corporate social performance. Despite the strong theoretical underpinning of the resource dependence approach, little effort has been made to articulate its managerial implications for improving governance practices and structures (Zahra and Pearce, 1989).

2.6.2.3. *Agency Theory*

Once considered the exclusive domain of finance and economic research, agency approach is among the most recognized in research on the contribution of Boards (Zahra and Pearce, 1989). This perspective argues that agency relationships should be the focal point in analyzing and studying corporate governance. Agency theorists believe that owing to dispersion of corporate ownership, executives (called "*agents*") possess considerable freedoms and powers. Left alone, these executives are believed to pursue objectives that may contradict the goals of the principals ("*owners*"), hence stakeholders' wealth maximization may be overlooked (Masson, 1971). Within this context, Boards perform the critical function of monitoring and rewarding top executives to ensure maximization of shareholders' wealth. In essence, the Board is seen as the ultimate mechanism of corporate control.

Following this approach, Board contribution to organizational performance occurs by reducing agency cost arising from non-compliance of executives with established goals and procedures, by articulating shareholders' objectives and focusing the attention of key executives on company performance, and through strategic decision-making and control (Mizruchi, 1983).

Agency theory offers a comprehensive definition of Board attributes of composition, characteristics, decision process and structure. This definition is similar to that of the legalistic approach with a notable exception. Agency theorists have shown more attention to Board decision-making processes than have legalistic scholars. This emphasis is consistent with agency theorists' interest in how Boards perform their job and how they monitor managerial actions to reduce agency cost.

It is important to note that agency theory places a premium on a Board's strategic contribution, specifically the Board's involvement in and contribution to the articulation of the firm's mission, the development of the firm's strategy, and the setting of guidelines for implementation and effective control of the chosen strategy. Although existing literature does not fully define the content of this strategic contribution, advocates believe that it becomes evident at those critical points, when important choices must be made. Examples of critical choices are acquiring a new firm, divesting a division, or negotiating a takeover bid (Baysinger and Butler, 1985; Kosnik, 1987).

Yet, other agency theorists argue that board involvement in strategic action (such as restructuring) will occur when performance reaches lower levels prior to activation of the market for corporate control (Johnson et al., 1993). While the market for corporate

control is assumed to promote shareholder value a board generally prefers to promote firm's efficiency without activating this market.

Agency theorists adopt a broad definition of Board roles. Control is the more important Board task, followed by service and strategy. This order is different from the resource dependence perspective. The internal control is the most important of the three roles, according to agency theorists.

Despite its popularity, the agency perspective has three shortcomings (Zahra and Pearce, 1989): First, the agency notion is founded on some questionable assumptions about the "agent's" (i.e., the General Manager's) values and motives (Kaen et al., 1988). Agency theorists start their analyses with the assumption that General Managers, driven by self-interests, will deviate from the shareholders' mandate. By accepting this assumption without debate, agency theorists ignore rival and more contemporary theories of the firm. These theories posit that companies must contribute to the quality of life in their communities and societies. Failure to perform this important social responsibility role may undermine shareholders' long-term interest. Therefore, in balancing conflicting demands on the firm, General Managers' deviation from short-term wealth maximization may be prudent (Goodrich, 1987).

Second, like the legalistic scholars, agency theorists have thus far failed to document the extent to which Board-members perform their different roles and how they make decisions. Thus, the assumption that Board-members do a credible job in monitoring General Manager and senior executives' performance lacks support.

Third, although the agency perspective emphasizes the crucial importance of the Board's strategic role, little documentation of this role exists. Also, and perhaps more serious, Board critics charge that Board strategic contribution is too infrequent to make a significant difference in company performance. These critics suggest that General Managers do not want Board-members to participate in designing or implementing strategies that are considered to be within the General Manager's domain (Rosenstein, 1987). These critics also suggest that poor Board-member selection and ineffective Board decision-making processes handicap the Board-members' strategic contribution.

2.6.2.4. Boards' Functioning and Performance

In combination, the described perspectives identify three important Board roles: **service**, **strategy**, and **control**. The review conducted by Zahra and Pearce (1989) disclosed a wide gap between the normative literature's recognition of these Board roles and empirical documentation of the extent to which each is performed in reality. For instance, though the control roles are well recognized in the normative literature

(Vance, 1983; Waldo, 1985), and the premise that, a healthy balance between the general manager and board powers is required to ensure effective company performance (Pearce and Robinson 1987) is stressed, research has shown that many Boards fail to monitor General Manager's performance or evaluate General Manager's decisions, such that Board analyses of corporate performance are often perfunctory (Goold and Quinn, 1990). Thus, Boards' performance of their control role is often inadequate.

Research support for the service role is strong (Vance, 1983) but equivocal. Critics charge that Boards have failed to develop appropriate codes of conduct for their executives and employees (Leibowitz, 1978). In essence, Board-members have failed to reflect changing societal values in shaping corporate identity because Boards lack requisite power to bring about desired changes in the role of the corporation.

Similarly, despite the perceived need to involve Boards in the strategic arena (Rosenstein, 1987; Tashakori and Boulton, 1983), empirical evidence is that the contribution in this regard has been very limited (Henke, 1986). However, a growing recognition of the importance of Board-members' professional expertise in developing, implementing, and refining strategies within their own firms has prompted much new research (Estes, 1980; Kreiken, 1985; Rosenstein, 1987). Among recent findings are that Board-members function as boundary spanners who have access to information vital to the diagnosis of opportunities and threats. Therefore, Board-members can aid managers by mapping or reviewing strategic actions (Pearce and Zahra, 1991; Harrison, 1987; Kreiken, 1985; Tashakori and Boulton, 1985; Waldo, 1985). It has also been argued that the performance of the fiduciary responsibility vested in Board-members requires attention to strategic concerns. Executive performance cannot be evaluated reliably without an appreciation of the strategic issues facing the firm (Kreiken, 1985; Waldo, 1985).

Empirical research on the strategic role of Boards needs further development. Preliminary results show that Board-members are not so actively involved in the strategic arena as agency theorists have assumed.

The tentative nature of empirical evidence on performance of the three Board roles may be partially explained by the shortcomings of past research. These research efforts have often been limited in scope, based on convenience samples, and inconsistent in operationalization of Board variables. Moreover, the bulk of this research has focused on the direct associations between Board attributes and company performance, thus ignoring the indirect path (through roles and strategic initiatives) discussed by the theoretical perspectives. These limitations suggest that caution is advised in interpreting empirical findings on the relationship between Board roles and company performance (Zahra and Pearce, 1989).

Recent research emphasizes the importance of understanding the General Manager's views as a means to improve efforts on Board reform. Most reform efforts have been established on the assumption that the General Manager's self-interest is an obstacle to having an effective Board. However, the results of those studies questioned this view and highlighted the need to improve the incorporation of General Manager's opinions into Board reform efforts, for the latter to be fruitful (**Pearce and Zahra, 1991**).

Concluding this section, one may pinpoint that external environmental forces and internal organizational factors may play an important role in terms of Board involvement in strategic decision-making and the General Manager's power position. Do Boards become more or less involved when the perceived environment becomes volatile? To what extent the internal factors are perceived by the Board-members as affecting a strategy being implemented? It seems evident that these are areas not dealt with in the literature and answers to these questions could be useful in assisting the understanding of corporate governance.

2.6.3. Board Demographics and Composition

Primary emphasis is placed by research on observable Board characteristics as indicators of the givens that a Board-member brings to an administrative situation (**Hambrick and Mason, 1984**). Numerous studies have documented the direct consequences of Board attributes on the effective execution of Board-members' roles. Board size and type of membership have been found to influence the service (**Mace, 1971**), strategy (**Baysinger and Zeithaml, 1986; Judge and Zeithaml, 1992**), and control roles (**Kesner et al., 1986**).

Concerning the service role, research indicates that without appropriate Board composition Board-members may fail to help the firm in achieving its goals. For example, Boards that have a majority of their members as outsiders are in a position to establish viable links with different sectors of the external environment. Given the diversity and breadth of their expertise, outside Board-members are in a position to provide counsel to management. Outsiders are also conducive to successful fund raising in not-for-profit firms because of their connections and professional personal reputation. In case of profit-oriented firms, these outsiders are crucial in ensuring essential resources for the firm (**Pfeffer and Salancik, 1978**). These observations indicate that effective Board composition is essential to successful performance of the service role. However, there are opposing views indicating that if the organization's own norms and values are well-adapted, introducing outsiders with different values will reduce efficiency, since they would introduce different non-adaptive values. This would increase the

likelihood of misunderstanding and mistrust and would elevate the level of conflict (Hambrick and Mason, 1984).

Composition also plays an important role in enhancing the performance of the Board's control role. Larger Boards are not as susceptible to managerial domination as their smaller counterparts. They are also more likely to be heterogeneous in members' background, values and skills. Thus, they are likely to resist managerial domination and to present shareholders' interest. Moreover, apart from the issue of managerial domination, heterogeneous groups, by generating greater conflict, can assist in shaping better solutions to the problems of environmental adaptation. Resolving the conflict associated with a heterogeneous group (having diverse skills and outlook characteristics) would increase the adaptability of the group and impact on long-term performance (Murray, 1989; Mason and Mitroff, 1981; Bourgeois, 1985; Tjosvold, 1987). Therefore, these Boards would be more actively involved in monitoring and evaluating General Manager and company performance, normally through specialized committees.

Finally, composition is important for the performance of the Board's strategic role. Larger Boards, the presence of a majority of outsiders, and the representation of minority groups (and also *"the weaker socialization process operating in groups whose members have been together for shorter periods"*, Murray, 1989; p.138), all these are presumed to be more conducive to debate and discussion of the firm's mission, goals, and appropriate strategy. Such debates enlarge the basis of expertise, force management to consider a wide range of options, and clarify constraints within which strategy implementation should proceed. Thus, composition variables may determine the level and nature of Board strategic role.

Research has shown that specific Board characteristics are essential for the effective performance of the Board's three roles. Each role requires distinct skills and abilities. For instance, Board-members' professional competence and prestige are necessary for legitimating the firm's service. Evidence indicates that age and tenure with the firm and with the Board have a stronger impact on adaptation and long-term performance than occupational and educational backgrounds do. Thus, socialization processes within the group have a greater impact on group capabilities than does the sum of the capabilities of the individual members (Murray, 1989). A healthy balance between external effectiveness and internal efficiency is necessary for a strategic role. Independence from management is necessary for the control role (Molz, 1988).

Effective structure is also a major condition for effective Board roles in service, strategy, and performance. To perform the service successfully, appropriate committees should be established (Jemision and Oakley, 1983). Committees such as public policy and social

responsibility make it possible for the firm to identify major societal concerns that are likely to influence company performance (Kohls, 1986).

Specific features of Board structure are also important for performance of the strategic role. The existence of long-range planning (Brown, 1981), technology (National Association of Corporate Directors, 1982), and public policy/social responsibility (Kohls, 1986) enable Board-members to study issues in depth, and offer specific suggestions for managerial action. At a minimum, these committees enable Board-members to evaluate managerial initiatives.

2.6.4. Labour Participation in Corporate Boards (Co-determination)

Legislation requiring corporations to grant employees' representatives voting power on their governing Boards has been experienced in many European countries (Germany, France, the Netherlands, Austria, Norway, Sweden). Yet the effects of legally mandating these co-determination rights on corporate operations and performance are still surrounded by much debate.

Researchers have listed numerous arguments. On the supportive side, co-determination is seen as enhancing employees' self-development and self-esteem, humanizing the corporate system, and making it politically more acceptable. Furthermore, it is assumed to improve communication within the firm, as it overcomes informational problems and contributes to more harmonious co-operation of employees and management. Sizable productivity gains are experienced. On the opponents side, there are arguments ranging from the expropriation of the firm's owner to the reduction of investment incentives and the worsening of the working environment (Benelli, Loderer and Lys, 1987), because an initial failure of a co-determination process would result in further regulation and control by the State, given the interventionist political climate.

Though some researchers (e.g. Benelli et al., 1987) found little evidence that co-determination had any economic effects on firms in Germany, they attributed this lack of impact to the absence of a common objective among employees. Unlike shareholders, employees cannot agree on wealth maximization because their financial claim on the firm is not tradable. *"Given different endowments, time horizons and tastes for on-the-job consumption, utility maximization by employees will result in different and probably contradictory maximization conditions. Even lay-offs, which are commonly thought to be opposed by all firm employees, may face a divided constituency, because those who expect to keep their jobs may in fact end up better-off"* (Benelli et al., 1987; pp. 573-574).

Others (Taylor and Sparkes, 1979; Hawkins, 1979) spot the danger of alienating employees-directors from the work force, since the idea of employees-directors ignores the fundamental division of interests between management and employees. Also, employees-directors would create a channel of communication and representation separate from (and probably in conflict with) the established machinery of collective bargaining, i.e. the trade unions. In organised firms, this might result in weakening the loyalty of the work force to the union; in unorganised ones, workers-directors might be used as a covert method of keeping collective bargaining at bay.

In firms where trade unions are well-established, workers-directors would come under strong pressure from union organization to represent trade-union interests in the Board-room. This would result in turning Board meetings into bargaining sessions and decision-making would become prolonged and difficult. Under such conditions, it would be unlikely to stimulate the kind of joint problem-solving approach to strategic decisions, which from a managerial viewpoint is the *raison d'être* of workers' participation in the Board-room. As evidenced in some countries, though originally designed as a method of electing worker-directors, this scheme has become increasingly dominated by trade-unions' representatives (Taylor and Sparkes, 1979; Hawkins, 1979).

2.7. SYNOPSIS

Regarding the research objective, that is to investigate how strategies were formed in the focal organization by looking into Board-members' rationalizations about strategy and evaluating how the mix of these perceptions influenced strategic choices and implementation, the following points must be emphasized in relation to the conclusions drawn from the literature review:

1. Strategic leadership has been studied along different characteristics of the leaders, such as age, tenure, educational and functional background, knowledge, skills, personality and cognitive style. However, the latter has not been studied in the collective context of a Board.
2. Studying cognitive styles in a Board's context would provide sufficient description of important Board attributes, especially structure and process which, so far, are under-researched.
3. Top management team research has developed along different theoretical schemes which stress the importance of alternative roles for the members of such teams. Conflicting results have been reported, regarding the influence of the

characteristics, composition and structure of a Board on the company's performance. This suggests that further variables, such as external factors, internal contingencies, or the ownership of the firm, should be incorporated into the analysis.

4. The nature of Board processes over time has not been studied. The majority of studies concern cross-sectional samples and relied on samples drawn from data banks. In this thesis, processes would be looked into along two lines of inquiry: (i) By studying how the Board-members' cognitive styles interact and interrelate; this would provide explanations about what they thought about strategy and how they communicated and interacted; and (ii) By depicting the patterns of organizational decisional activity across different decision-areas, over time; this, would highlight the exact nature of decisions that the Board has made.

5. By taking into consideration the cognitive styles of Board-members and their interactions and patterns of organizational activity, it would become possible to determine (i) when Boards exercise their powers, and (ii) how their members may influence the direction an organization follows; that is, to determine the way in which the Board-members contribute to the making of strategic decisions.

6. The large majority of studies have focused on the Fortune 500 population. Yet, exclusive attention on these companies probably ignores the nature of Boards in different types of firms. For instance, the role of Boards in smaller, medium-sized, and non-for-profit firms has not been examined in a systematic fashion. Very few studies for this type of firms may be traced in the strategic management literature.

7. Related to the above argument is the fact that public firms have often been studied by political scientists and economists but rarely by organizational researchers. If this happens because political authority constrains organizational activity to the degree that no choices regarding the company's future can be made by the public managers, then certainly this domain of inquiry concerns other disciplines. But if there is a certain domain of discretion, as researchers have argued, then it would be revealing to investigate how people at the top perceive this authority, what values (and why) they assign to decision-outcomes, and which reasons they cite for any outcome considered as crucial for the organization's survival. Especially, when different stakeholders are involved in decision-making, then a deeper understanding of how change gains legitimacy might be achieved.

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believe that the use of numbers provides more accurate information and that the development of measurement procedures leads to the precise definition of new concepts capable of being used in the scientific theory. Widely used methods to conduct this type of research are survey questionnaires, demographic analyses, inventories, and statistical tools, and they are applied in order to prove relationships between defined variables.

The second stream, which may be described as **interpretative** (e.g., **Schwartz and Jacobs, 1979; Denzin, 1978; Bogdan and Taylor, 1975**), stresses the importance for developing ways of gaining access to the life-world of other individuals. In this view, the focal point of interest is the individual "actor" in the context of his daily life.

Researchers within this stream aim at knowing what actors (people within the social setting they investigate) know, and understand what they understand. They attempt to describe actors' vocabularies (rhetoric), their ways of looking, their sense of the important and unimportant. Their most important preoccupation is to capturing the meanings or "*understanding*" of the social individual actor.

There is, however, a number of researchers believing that these two seemingly different approaches could be reconciled. Some of them argue that a new paradigm -a paradigm of choices- should replace the debate and competition between the two above perspectives. This new paradigm recognizes that issues of selecting methods should be based on carefully evaluating the situations under study (**Patton; 1980**). Different methods are appropriate for different situations. Others take a mediating position; while valuing the insider's point of view they also suggest the consideration of "*social settings*" as the context in which forms of interaction occur (**Silverman, 1985; Pettigrew, 1985**).

These recent recommendations constitute an important perspective which this study aims to follow in order to explore effects of social context upon individuals (all environmental and organizational stimuli) through their perceptions concerning the strategic choices they made during the implementation of a strategic plan.

3.2.2. Qualitative Methods

3.2.2.1. Definition, Aims and Techniques

As **Denzin (1978)** has noted, too often the social scientists' preconceptions prevent the subjects studied from telling things as they see them. The task for the qualitative methodology is to provide a framework within which respondents represent their thoughts, their experiences and their basic perceptions, in a single phrase their points of view about the phenomenon under study in their own words.

CHAPTER 3

BACKGROUND TO THE RESEARCH DESIGN

3.1. INTRODUCTION

This chapter deals with the theory of the type of the research chosen and demonstrates its relevance to the purposes of this study. The chapter describes qualitative research, its most used methods, and argues about the legitimacy to employ this type of research in terms of the conceptual model that is to be built, in order to explain the relationships between actors' rationales and the processes of change as revealed in decision patterns. The chapter also deals with the specific method employed -the case study- and sets the criteria for selecting this particular enterprise. The final part of this chapter is devoted to theory building which is the desired outcome of this study and argues about the method of inferences -analytic induction- used to achieve it.

3.2. QUALITATIVE RESEARCH

3.2.1. The Main Sociological Paradigms

In social sciences, and management science is considered as such, there are two main streams that advocate different notation systems for describing the world, differing about in what meaning they assign to the word "*science*" and thus using radically different activities to attain to it.

The first stream, named as **positivism** seeks the facts or causes of social phenomena with little regard for the subjective state of individuals; it assigns numbers to qualitative observations (Schwartz and Jacobs; 1979) and thus produces data by counting and "*measuring*" things. There are no restrictions about the nature of the things measured; they can be individuals, groups, whole societies and so on. Quantitative researchers

What people say, constitutes one of the dimensions that qualitative research bears on (i.e. the perceived facts). Alongside, there are three more dimensions: (1) the pure description of people, activities and interactions; (2) direct quotations from people; both what they speak and what they write down; and (3) getting close to the people and the situation being studied to be able to understand what is fundamental or central to the people under observation (Lofland, 1971; Patton, 1980).

According to Bogdan and Taylor (1975), qualitative research is more frequently concerned with the identification of concepts in the data and with the development of a theory which incorporates them, than with the determination of how many such concepts there are. This of course does not exclude the qualitative researcher from the need to acquire a knowledge of the empirical and theoretical research likely to impinge upon the research issue. This should be applied to identify pertinent issues that might be illuminated by research but care should be taken not prematurely to foreclose potentially fruitful lines of enquiry.

Walker (1985) argued that the techniques termed "*qualitative*" tend to be less structured than the respective quantitative, in order to be made more responsive to the needs of respondents and to the nature of the subject matter. Usually they are based on a limited number of individuals and bring onto the stage the context of data gathering. By defying the rigidity of methods used in quantitative research, Walker (1985) subscribed to the view that social phenomena should let reveal their intimate life which in no sense is to be taken at "*face value*". On the contrary, they have to be explored, their contradictions have to be explained and deviant cases should be incorporated in the explanations.

There is a large and growing repertoire of qualitative techniques; case studies, depth interviews, group interviews, documentary evidence, participant observation and projective techniques. While, according to Walker (1985) or Denzin (1978), observation is considered to be the archetypal qualitative method, it contrasts with the others in that the research subjects are studied in their own "*social*" or "*natural*" environments. In all other methods the interaction is essentially artificial.

The methods described above can be used in conjunction with each other or with other methods such as surveys and documentary source analyses, to cross check the hypotheses generated and to provide a better understanding of the context (Pettigrew, 1985; Mintzberg, 1987).

3.2.2.2. Applications of Qualitative Research

Most writers on the subject argue that the choice of qualitative techniques as the main approach during the principal phase of a project frequently depends on the research topic (Bogdan and Taylor, 1975; Hammersley and Atkinson, 1983). Maybe the topic is complicated or sensitive, concerned with relationships or interaction, or with processes of change. Perhaps the phenomenon is not measurable. The choice may be conditioned by the research subjects who may have limited communication skills or, alternatively, require "*VIP-status treatment*" which prohibits the use of standard measurement techniques that "*require the 'subject' to perform operations or give responses which may seem at best mystifying or at worst humiliating*" (Walker, 1985, p.21). The research population might be extremely small, difficult to locate, or discrete. This can sometimes lessen the concern about representativeness and inference, and thus tip the balance away from an interest in measurement. As Walker (1985) argued, the choice of qualitative methods may reflect limitations in the state of the quantitative art or a philosophical stance in which quantification is inappropriate.

3.2.3. Legitimacy of Qualitative Methods

3.2.3.1. The Issue of "True"

Positivist scientists rely upon statistical significance and levels of certainty in order to validate their findings. However, it has been argued that this methodology does not totally resolve the problem of causality. Even if variables prove to be statistically correlated, the final causal explanation relies basically on the grounds of plausibility. Mitchell (1983) quoted an example in which scientists could not accept the explanation of the relationship between two characteristics of a phenomenon being studied, while they may well have accepted that the experimental results were produced with an unimpeachable method.

Qualitative researchers claim that seeking the truth expresses a faith in the existence of an objectively factual social world (Johnson, 1975; quoted in Patton, 1980, p.270). They claim that research findings involve always a personal perspective. Patton (1980, p.272) substantiates it in the question: "*What is truth? Is it unitary, objective, outside of the being of individuals? Or is it multiple and varied, coloured by our layers and layers of experiences? Or is it both?*" To him "*the latter 'feels' better*".

Others have replaced the concern for truth with other concepts for evaluation of the research findings. There is always a trade-off between practical utility and level of certainty (Smith, 1978; quoted in Patton, 1980, p.273). By determining the level of

certainty desired in a specific case one could more easily choose appropriate methods. Naturalistic descriptions provide greater certainty in our understanding of processes than randomised controlled experiments, but less certainty in the knowledge of the strength of a particular effect. *"Our first concern should be the practical utility of our knowledge, not its ultimate truthfulness"* (Smith, 1978; quoted in Patton, 1980, p.274).

Treating the concern for truth as concern for science, **Schwartz and Jacobs (1979)** have argued that when understanding *"science"* as positivist science, reality reconstructions put in the front stage by the qualitative methodologists are in shaky grounds. They emphasise that currently there is no science of subjectivity. In their view, scientists within this paradigm are invoking common-sense knowledge vested in scientific rhetoric and still there is no answer to the question whether these scientists know more or less about the world than their positivist counterparts.

However, their approach is not one of a pessimist. Although they cannot prove that the concept of the *"insider"* is analytically a scientific useful category or that insiders experience the world in general similarities or that outsiders and insiders have sharp differences in the way they experience and know social phenomena, they believe in the benefit of the insider point of view. They conclude that eventhough no-one knows how the inside point of view is created and sustained, it is useful for the researchers to look into it because it exists. Since qualitative methods do not constitute a scientific achievement, the researchers are faced with the choice either of adopting the actors' views or devising a scientific way to study social life, in which the insider/inside would probably disappear as thought-constructs.

3.2.3.2. *Evaluation of Qualitative Research*

Walker (1985) proposed the following scheme in order to judge research findings according to their validity (accuracy of the findings) and their reliability (whether the same findings would have been produced by another researcher) .

First, he considered **descriptive validity** which involves asking whether each incident, event, act, or indicator is really what it is thought to be by the researcher. He found similarities between descriptive validity and measurement validity in quantitative research to the degree that both pay attention to what perspective most conditions the description of an incident and with what consequences.

Second, he defined **conceptual validity** which concerns the extent to which the concepts used fit the data. Questions related to the correspondence of the contents of categories

with their description and the nature of the categories defined (saturated or emerging) belong to this type of validity.

Third comes **theoretical validity** that relates to the way in which concepts are handled and the coherence of the resulting theory is tested. He categorised the following questions as being related to it:

- What is the intended relationship between data and theory and the balance between building and testing of theory?
- How are concepts and categories merged?
- What are the relationships between concepts and how are they defined and determined?
- Do the relationships stand in a logical relationship to one another or are they empirically determined? How well are empirical relationships established?
- Which concepts and relationships are least supported in logic or evidence and how significant are these for theory as a whole?

Fourth, he defined **external validity** as the concern with the scope and generalisability of the theory and largely dependent upon the nature of the sample used. His definition bears resemblance to the usefulness and level of certainty that other authors consider for the purpose of conducting qualitative research (refer to the previous section).

Finally, **reliability** refers to the extent to which results are reproducible. He advocated the fact that other persons could be involved in the research process to enhance reliability. He considers the reader of the report as playing a role through the process of discounting, inaugurated by **Glazer and Strauss (1967)**. According to them, the reader validates the theory proposed by correcting, adjusting and proving inapplicable parts of it that do not fit structures the reader himself has experienced.

Denzin (1978) considered as criterion of validity a method of generalization known as **analytic induction**. **Hammersley and Atkinson (1983)**, **Mitchell (1983)** and **Silverman (1985)** subscribed to this view by recognizing its strength in the development of theory. **Denzin (1978)** argued that this method enables fact, observation, concept, proposition and theory to become closely articulated. To this issue, the final part of this chapter will devote a detailed analysis.

3.2.4. Theory Generation as Desired Output

In their influential work, Glazer and Strauss (1969) have pin-pointed to the need for the researchers to generate theory. While verifying existing theories is an absolutely legitimate and vital task, they assert that the generation of theory through comparative analysis both subsumes and assumes verifications and accurate descriptions, but only to the extent that the latter are in the service of generation. According to them, accurate evidence, the kind of evidence as well as the number of cases studied, are not so crucial in the attempt for generating theory. If, from the data in hand, the researcher could indicate a general conceptual category or property for general and specific situations and problems, then theory development is achieved. They defined two sorts of theory; substantive theory applied to an empirical area of sociological inquiry, and formal theory, applied to a formal or conceptual area. They named both as "*middle-range*" theories because they are positioned in between the "*minor working hypotheses*" of the everyday life and the "*grand*" theories.

Hammersley and Atkinson (1983) also emphasized the need to acquire a higher level of abstraction in the analysis of findings. According to them, "*concrete descriptions cover many different facets of the phenomenon they describe, they give a rounder picture, and open up all manner of theoretical possibilities. Theory development involves a narrowing of focus and a process of abstraction. Theorized accounts give a much poorer representation of the phenomena with which they deal. On the other hand, assuming the theoretical ideas are well founded, they begin to give us much more knowledge about how a particular aspect of social process is organized and perhaps even why events occur in the patterned ways they do*" (p.177). However, in order the transition from data to theory to be obtained, it should be described by the linking process that would display the unity of data and the outcome produced, demonstrated in a logical and acceptable manner. In the research terminology, this linking process is often called interpretation. Interpretation is the search for the broader meaning of the research findings. It leads to the establishment of explanatory concepts and displays the continuity in social research through establishing the connection between the results of the study to those already found in the literature.

Glazer and Strauss (1969) have proposed the use of both codified procedures and the constant comparative method. In their view, "*since the analyst is forced to make theoretical sense of each comparison*" the probability of an integrated and clear theory to emerge is enhanced.

An interesting issue arises at this point if someone wants to question the term "*clear theory*" that Glazer and Strauss (1969) used in their argument. Is this theory free of

any influence which might implicitly guide the research up to its ultimate phase? There are researchers claiming that everyone brings into the research field a theoretical predisposition, either explicitly or implicitly stated (Patton, 1980). Such theoretical predispositions constitute basically the researcher's world view and refer usually to a macro-level theory. Kuhn (1970) has described just how second nature these perspectives can become: *"Scientists work from models acquired through education and through subsequent exposure to the literature, often without quite knowing or needing to know what characteristics have given these models the status of community paradigms... That scientists do not usually ask or debate what makes a particular problem or solution legitimate tempts us to suppose that, at least intuitively, they know the answer. But it may only indicate that neither the question nor the answer is felt to be relevant to their research. Paradigms may be prior to, more binding, and more complete than any set of rules for research that could be unequivocally abstracted from them"*.

Pettigrew (1985) developed from the beginning of his research a theoretical framework relating to the specification of the model of man. *"Within this research on change, strong emphasis will be placed both upon the man's capacity and desire to adjust to social conditions to meet his ends, and the part played by power relationships in the emergence and ongoing development of the processes being examined. This view of man, contained within the means-end schema of social action theory, avoids the hard determinism identified in some of the radical structuralist perspectives on organizations. Instead of some higher-level variable (e.g., the world system) or state determining some lower-level phenomena, the relationship between higher and lower is now analysed through a variant of causalism in which actors play parts in bounded social processes"* (p.36).

Right from the beginning of their influential book, Bogdan and Taylor (1975, p.1) defined methodology as *"the process, principles and procedures by which we approach problems and seek answers. In the social sciences the term applies to how one conducts research. As in everything we do, our assumptions, interests, and goals greatly influence which methodological procedures we choose. When stripped to their essentials, most debates over methods are debates over assumptions and goals, over theory and perspective"*.

This research is based on a set of principles derived from the sociological theory of realism. These principles will be guiding the development of theory, the objectives of which have already been discussed. The principles on which the theory will be grounded are: (1) There is no need to limit explanations to actors' own understanding. Although laws are inappropriate to the social world, there are circumstances when social structures can be as coercive as natural laws. (2) Social structures do not exist independently of

human activity, but are not produced by it. (3) People do not create social structures, for they always pre-exist them and are a necessary condition for their activity. (4) Rather society must be regarded as an ensemble of structures, practices and conventions, which individuals reproduce or transform, but which would not exist, unless they do so (Bashkar, 1979; quoted in Silverman, 1985, pp.33-36).

3.3. EMPLOYED TYPE OF QUALITATIVE RESEARCH

3.3.1. The Case Study

3.3.1.1. Definition

Case-study or case-history is a research strategy that is used for uncovering the effects of external events upon the internal experience of the individual (Schwartz and Jacobs, 1979). Miller (1983) argued that this type of research is concerned primarily with processes and patterns under investigation of a single group, institution, organisation or community. Emphasis is on the social structure, i.e. interrelationships of parts of the structure and social interaction which are taking place. It attempts observations of social interactions or investigates thoroughly the reciprocal perceptions and attitudes of people playing interdependent roles. The same view is taken on by Pettigrew (1985). Criticising the ahistorical, acontextual and aprocessual character of much of the research in the organisational field he emphasised the importance of historical analysis and the significance of antecedent conditions in explaining the dynamics of change. Further, he used the case study method to build a multi-level and processual analysis of organisational phenomena, what he calls "*a holistic, contextualist approach*".

Pettigrew (1985) described the multi-level as the vertical form of analysis and the processual as the horizontal form of it. The vertical level refers to "*the interdependentness between higher or lower levels of analysis upon phenomena to be explained at some further level, for example, the impact of a changing socio-economic context on features of intra-organizational context and interest group behaviour; while the horizontal level refers to the sequential interconnectedness between phenomena in historical, present and future time*" (pp.35-36).

Giddens (1979) argued that the separation of function (relations between "*parts*" of a "*whole*") from seriality (happenings in time) cannot be sustained; a functional relation cannot even be stated without implied reference to temporality. He introduced the notion of structuration as the true explanatory locus of structural analysis. To study

structuration is to attempt to determine the conditions which govern the continuity and dissolution of structures or types of structures.

According to the arguments put forward by these authors, synchronic analysis of a phenomenon must be coupled with its diachronic evolution. A good deal of data are needed to support such a holistic analysis which can reveal trends and forces as well as relationships, actions and behaviours between groups and individuals. However, the most significant inducement for conducting case studies is the argument pin-pointed by **Weick (1976)**. He discussed the problems confronted by an observer and remarked: *"Our attention tends to be drawn to things that vary the most and things that vary little, thus have low visibility. The most obvious and visible coupling within organizations may not necessarily be the most critical to an understanding of organisational change, especially if the really important events occur infrequently. The remedy to this problem is a thorough immersion into the affairs of the organization, coupled with knowledge of the way things work in other organizations"* (p.16).

Mitchell (1983) defines the case study as the detailed examination of an event, or a series of events, which in the researcher's opinion exhibit the operation of some identified general theoretical principle. This principle forms the basis on which inferences will be drawn. Mitchell also suggests that the researcher is sufficiently close to the phenomenon under investigation, in order to understand it.

3.3.1.2. Nomothetic-Idiographic Approaches to Life Histories

There are two basic orientations to **life-histories** or case histories within the social sciences.

The **nomothetic** approach contends that theoretical generalizations should be applicable to many individuals or entities and should derive through systematic experimentation usually involving the use of statistical validation. This approach regards the case study as an excellent pedagogic aid for learning theoretical constructs and as function to generate new concepts (**Schwartz and Jacobs, 1979**). Beyond this, the uses and contributions of the case study diminish since it is considered that it is scientifically impossible to generalize from single cases.

The **idiographic** approach stresses the legitimacy of investigating and researching the life of a single individual or entity (should it be a community, organization, programme or concept) and is concerned only secondarily with the frequency or nature of a variable outside the realm of that individual or entity. This view asserts that it is scientifically valid and methodologically correct to study the behaviour of one single entity and to

perceive it not only as a representative of a group but also as an independent totality from which generalizations may be drawn. It further contends that the true goal of social science is to understand behaviour, not to quantify, classify or dissect behavioural patterns. Idiographists believe that this is best accomplished through the use of the case study method since this allows one to study the totality of a single entity on a gestalt level.

Von Bertalanffy (1968), the founder of the General Systems Theory, also acknowledged these two widespread conceptions in relation to the study of social systems (from small groups like the family, over innumerable intermediates of informal and formal organizations, to the largest units like nations, power blocks and international relations). According to his view, (1) there are atomistic conceptions which neglect the study of "*relations*" and (2) there are conceptions neglecting the specificity of the systems concerned such as "*social physics*" or "*social engineering*". He further stressed the need to form a link between social sciences and history. Although the techniques in sociology and history may look entirely different (polls, statistical analysis against archival studies, internal evidence of historic relics, etc.), the object of study is essentially the same. Thus, social sciences endowed with the "*longitudinal*" perspectives of history could generate fruitful insight, since social sciences and history have not fundamentally different philosophies.

Von Bertalanffy (1968) questioned the possibility whether, apart from the mere description of happenings, a theoretical history is possible which can establish laws based on the fact that events in nature are repeatable and recurrent, because if history has occurred only once it can only be idiographic (a description of events which have occurred in a near or distinct past). Although the orthodox and predominant perspective of historians is of an idiographist nature (it argues that human events are of enormous complexity in causes and outcome and can only describe more or less satisfactorily what has happened in the past) and condemns constructs of history as "*intuitive*", "*contrary to fact*", "*arbitrary*", **Von Bertalanffy (1968)** made a strong argument against it. He reported that orthodox historians have written about Napoleon (his character and career) a dozen or so different interpretations, all based upon "*fact*" (the Napoleonic period happens to be one of the best documented) and all flatly contradicting each other and further commends: "*If even a figure like Napoleon not very remote in time and with the best of historical documentation can be interpreted contrarily, you cannot well blame the "philosophers" of history for their intuitive procedures, subjective bias, etc... What you have in both cases is a conceptual model which always will represent certain aspects only and for this reason will be one-sided or even lop-sided. Hence the construction of conceptual models in history is not only permissible but as a matter of fact is at the basis of any historical interpretation as distinguished from mere enumeration of data*" (p.109).

In discussing whether historical investigation can be considered research and/or scientific, **Best (1970)** pointed out the following limitations of the technique:

1. Although the purpose of science is prediction, the historian cannot always generalize on the basis of past events. Because past events were often unplanned or didn't develop as planned, because there were so many uncontrolled factors, and because the influence of one or a few individuals was so crucial, the same pattern of factors is never repeated.
2. The historian must depend upon the reported observations of others, often witnesses of doubtful competence and sometimes of doubtful objectivity.
3. The historian is much like a person trying to complete a complicated jig-saw puzzle with many of the parts missing. On the basis of what is often incomplete evidence, he must fill in the gaps by inferring what has happened.
4. History does not operate in a closed system such as may be created in the physical science laboratory. The historian cannot control the conditions of observation nor manipulate the significant variables.

He then attempted to counter these arguments with the following points:

1. The historian delimits a problem, formulates hypotheses or raises questions to be answered, gathers and analyzes primary data, tests the hypotheses as consistent or inconsistent with the evidence, and formulates generalizations or conclusions.
2. Although the historian may not have witnessed an event or gathered data directly, he may have the testimony of a number of witnesses who have observed the event from different vantage points. It is possible that subsequent events have provided additional information not available to contemporary observers. The historian rigorously subjects the evidence to critical analysis in order to establish its authenticity, truthfulness, and accuracy.
3. In reaching conclusions, the historian employs principles of probability similar to those used by physical scientists.
4. Although it is true that the historian cannot control the variables directly, this limitation also characterizes most behavioural research, particularly nonlaboratory investigations in sociology, social psychology and economics.

While **Von Bertalanffy (1968)** stressed the acceptance of both methods and **Best (1970)** advocated for the acceptance of the historical investigation as a valid scientific

instrument which has limitations as any other instrument does, **Schwartz and Jacobs (1979)** argued that these two orientations need not to be in conflict. Indeed they may complement each other: *"One may in the course of applying the idiographic approach acquire a set of data to which one may then apply a nomothetic approach"* (p.69).

It could be said that this is the case in this study. Acquiring and analysing the perceptions of the stakeholders' groups of the Board of the enterprise, the research will be looking at uncovering patterns between them, in relation to either the internal and the external environment of the firm, as well as at tracing the way they interrelate and interact, thus form an interpersonal reality.

3.3.2. Criteria for Selecting the Specific Case

According to **Yin (1984)** a case selection should display the following properties: (1) be representative; (2) be revelatory; and (3) be an extreme case.

Silverman (1985) argued that methodological issues could be an incentive for research. Large scale quantitative studies have incorporated the public sector enterprises performance in order to look at macro implications of several economic indicators. These studies have used mainly an input-output model of the enterprise and they have excluded direct studies of processes that take place into this *"black box"*, between the input and output phases. Furthermore, strategic management literature admits a lack of this type of research topic in the area of public sector enterprises (**Shrivastava, 1987**). This study adds to the list of properties proposed by **Yin (1984)** two more properties considered: (1) to be a different methodology within a field tested with other research apparatus; and (2) to be in an unexploited area of management research. Therefore, the criteria for selecting the specific case study design are the following.

3.3.2.1. Case Study as an Extreme Case

The case of the **Greek Railways (OSE-CH)** tends to constitute an extreme case, according to at least two points of view.

Greek Railways are probably the least developed railway network within the European Community. Since *"a chain is only as strong as its weakest link"*, rail transport efficiency, within the community, is to some extent determined by the efficiency of the least effective partner. Though the geographical position of Greece in the continent may render this argument exaggerated, it should be emphasized, that this country provides physical, and other links between the rest of the community and major markets in the Asian and African continents. Recently the main axis Patra-Athens-Thessaloniki-Idomeni of the network has been included in the European High Speed Network, giving

thus the opportunity of considering Community's resources, as an alternative source of funding.

Because of their bad financial position, Greek Railways are one of the most problematic public enterprises in the country. Though this reality is the outcome of historical conditions, discussed in several parts of this thesis, it highlights both, the managerial dilemma regarding decisions on priorities between today's and future needs, and the environmental uncertainty within which these decisions are made (Paradissopoulos, 1989).

3.3.2.2. Case Study as a Representative Case

Despite the extreme character of its performance, the focal firm shares with state-owned firms common issues. Although, the list of issues relating to public enterprise activities is virtually without limit, this section will provide a brief summary of four broad categories that are often presented in literature.

Issues of objectives arise when there is no clear distinction between financial/nonfinancial and commercial/noncommercial objectives. Because, setting objectives involves agreements between political policy-makers and public enterprise managers, often these objectives, being the outcome of a compromise, are ill specified and conflicting.

Issues of control are related to the methods and the extent by which control is exercised by the government, and may vary from a general policy guidance to direct control of the quantities and prices of the output produced.

Issues of sources of finance concern the sources and types of finance used in relation with the activity being financed, and consequently are related to sources and type of credit for the public enterprises, the balance of payments and foreign exchange availability.

Issues of pricing arise when output prices do not reflect the full costs of inputs employed, with the result that consumption of the output is subsidised. The cost of the subsidy may be financed by the government directly or increased resort to credit by the public enterprise may be offered.

In the case examined, a decision was made almost ten years ago to invest heavily in the modernisation of the network and the company. Although, such modernisation has been fragmented by the implementation of only engineering projects and rolling stock acquisition, its continuation is in threat when considering that it takes place in a context

defined by: (1) the absolute (until recently) reliance on government funding, through the Public Investment Budget; (2) the almost complete dependence on foreign technology influencing both, the availability of required materials/equipment as it directly affects the balance of payments and the ability to comprehend and make the most of advanced technological products, designed, produced, and utilised in much different environments; and (3) the absence of short term payoffs which could both, result in substantial political profits on behalf of any ruling party and justify to the public opinion the large expenditure involved (Paradissopoulos, 1989).

3.3.2.3. Case Study as a Revelatory Case

The unique characteristic of the Greek Railways, in comparison with the other European Networks, is that a major structural and strategic change was introduced in 1986 concerning the participation of employees' representatives in the enterprise's main Board. Of the nine members of the Board, three, are elected employees' delegates through an electoral system that is designed to allow for the larger representativeness of trade unions balance of power. The French network (S.N.C.F) bears a certain resemblance to the above case but the percentage of employees in the Board is smaller and the procedure of their appointment is different (Gentil, 1984).

3.3.2.4. Case Study as an Alternative Methodology

Public enterprises in all countries play an important role in shaping the economy. Economists have tended to concentrate upon the monopolistic character of them especially those in the public utility field, and have tended to use analytical tools developed from models of the competitive market (Vernon and Aharoni, 1981). Interactions between the state owned enterprises and the political structure to which they are responsible are studied by other researchers (Anastassopoulos, 1981; Grassini, 1981). The relationship between public enterprises and political system in power results in creating a different reality for them; they should hold down prices and forgo profits in periods of inflation, should favour domestic supplies, should hold on to their workforce in periods of slump. On the other hand they have access to subsidised capital, guarantees against bankruptcy, exception from import duties, preference in governmental purchases. The way, however, the things just mentioned are seen by the interest groups involved (the managers, the civil servants, and the labour force) is not being studied extensively. Moreover, when the firm under study is in the course of implementing a strategic plan that is vital to its survival, the way these different groups perceived and respond to such imperatives, needs to be looked into, in a more detailed and sensitive approach. As Vernon (1981, p.21) remarked, "*What will be much slower in coming and what is much more urgently needed for the intelligent formation of public policy is an intimate understanding of what actually drives the many different varieties of state*

owned enterprises... So will longitudinal studies of individual firms as they move from their early acquisition by the State to a more routine relation, or as they move from an innovative role to one that is more humdrum, or as they move from a period of losses to a period of profits."

3.3.2.5. Case Study in an Unexploited Area of Management

Researchers have recently recognized that there is a gap in the area of strategic planning and management studies in the public sector. As **Bryson (1988, p.23)** pointed out, *"it should be noted that careful test of corporate-style strategic planning in the public and non profit sectors are few in numbers"*. **Shrivastava (1987)**, assessing the rigour and usefulness of a sample of research programs in the field of strategic management, conducted an extensive review in the literature. He reported that in the areas classified as strategic management of non-profit organisations and public policy no research program was found (**Wortman, 1988**).

When employing the term *"societal strategy"*, introduced by **Ansoff (1984)**, the case study of a public enterprise firm provides a unique opportunity to unveil its domain of application. Societal strategy, is defined as the combination of the aspirations of different powerful groups, within the firm, and of environmental pressures. Such an approach to strategy requires a method that is equipped to provide an understanding of the perceptions of business of the people involved, the political process by which these are implemented, of socio-political trends that have impacted on the firm. In **Ansoff's** words: *"Dealing with societal problems is very different from dealing with business opportunities. On the level of understanding this requires a recognition of the many different perceptions, points of view, and different ideologies which different influential groups bring to their interaction with the firm"* (**Ansoff, 1984, p.150**).

The five criteria mentioned indicate that the case selected fits into the nature of the research questions. This public firm in which strategy is defined and elaborated by all the power groups involved offers a unique inducement to describing and explaining a complex phenomenon in context.

3.3.3. Revealing Processes of Change

As **Pettigrew (1985)** has pointed out *"when strategic change does occur it tends to occur in radical packages -revolutionary periods interspersed with long periods of absorbing the impact of the radical changes, of further periods of increment adjustment and then a period of education, persuasion and conditioning leading up to the next revolutionary break"* (preface xix). Therefore, time itself sets a frame of reference within which changes are perceived and explained.

Moreover, social processes are not sequential routines, where linear relationships could model a causal explanation. Behind them, a variety and mixture of causes of changes is concealed. Thus, to explore some of the conditions and contexts under which these mixtures occur, requires a longitudinal design and a carefully planned data collection from both the external and the internal environment of the firm. In this sense, strategy implementation, being itself a process, is seen and analysed over time at three different but interrelated levels.

(1) At the level of outcome. The strategic plan implementation is seen, here, as a stream of decisions which triggered a continuous interdependent sequence of actions. All the decisions made by the Board over the examined period of nine years were gathered and classified chronologically. It should be noted that there was a small set of decisions that were not followed by immediate action. The execution of such decisions that required ratification at a higher (ministerial) level was usually considerably delayed. Wherever possible, these lags between decisions and the relevant actions were identified and commended upon.

(2) At the level of the decision-makers. The decision-makers' perceptions of the strategic decisions, and their interpretations, are the focus at this level. The factors (organizational or environmental) which influenced the strategic decisions are to be mapped in order to display their articulation, and then analysed in order to decipher the rules of their combination.

(3) At the level of the business/socioeconomic environment. An attempt is made here to present the variability of conditions in terms of principal business, political, social and economic factors, over the period studied. It is recognised, that the task is complicated, for, political social and economic factors are interrelated, thus, their origin seems sometimes blurred. However, it is these external conditions, their dynamics, and their perceived impact on the part of the firm's strategists, that provide one of the poles of the present study.

3.4. THEORY BUILDING

3.4.1. Connecting the Micro and Macro Levels

The case study used two sources of data; interview accounts, and archival evidence on decisions made, enriched with organizational and other information. The aim of this final phase is to form hypotheses which would lead to the building of an explanatory

theory accounting for the phenomenon under study. This theory should specify the relationship among a set of variables or concepts identified in the data. Silverman (1985, p.70) developed an argument with four related strands that reconciliates macro- and micro-perspectives which should be addressed in a research:

1. The opposition between macro- and micro-perspectives (between sociology of large-scale social structures and of interaction respectively) has been fundamental to how many sociologists have conceived and located their work.
2. It is misleading to assume that a fundamental choice must be made between these perspectives. While research data are often mainly gathered at either a structural or at an interactional level, sound analysis and intelligent conceptualization requires that both levels (and their relations) should be addressed.
3. The rapprochement between macro- and micro-perspectives cannot be achieved by approaches which assume that micro-phenomena can be reduced to macro-structures or vice versa. Nonetheless, although the levels cannot be reduced to one another, each presupposes the other.
4. As argued earlier, there is no future in "pure" sociologies of meaning or of structures. Individual elements need to be identified but analysis always centres on their articulation within a network of relations.

In this study, a proper understanding of actors' meaning of strategy (based on the set of identified strategic decisions) is to be followed by identifying the processes of interpretation through which the strategists reproduce "social structures" (socioeconomic factors, balance of power) and sometimes change them, in line with Pettigrew's (1985) "contextualist approach" for studying social processes in context: *"This approach recognizes that processes are both constrained by structures and shape structures, either in the direction of preserving them or altering them". In the past, structural analyses emphasising abstract dimensions and contextual constraints have been regarded as incompatible with processual analyses stressing action and strategic conduct. Here an attempt is being made to combine these two forms of description and analysis. First of all, by conceptualising structure and context not just as a barrier to action but as essentially involved in its production (Giddens, 1979; Ranson et al. 1980), and second by demonstrating how aspects of structure and context are mobilised or activated by actors and groups as they seek to obtain outcomes important to them" (Pettigrew, 1985, p.37).*

The guide-lines along which this study will be seeking to explain the phenomenon under study are the following:

First, a classification of decisions made by the board is to be produced. This classification led to a list of 42 decision-areas encompassing all decisions analysed. The collection and investigation of this formal documentary evidence will provide hints upon which the questions of the interview phase will be based at least in its beginning. Also maps will be produced depicting the patterns of decisions-areas over time.

Second an illumination of strategists' perceptions of the "*strategic*" decisions (via cognitive mapping) will take place and their perspective in viewing strategy will be articulated. The relationships among the different groups that constitute the Board of the focal enterprise (management, labour force, and government) will be identified, as well as other characteristics of the boardmembers will be detected in an attempt to sensitize the analysis by creating guidelines along which it may proceed.

Third, the above two data sources will be used to generate concepts on which propositions will be based. Finally a conceptual model about strategies and strategists is to be built implementation process and the strategists' rationales.

The means for achieving this task is analytic induction and is presented in the following section.

3.4.2. Analytic Induction

As described by Denzin (1978), analytic induction is a method of analysis which is used to make inferences. Analytic induction means that the patterns, themes categories, and finally relationships identified between the concepts involved, all have derived from the data. Denzin (1978, p.195) established the following sequence of stages to incorporate it to the research design.

1. A rough definition of the phenomenon to be explained is formulated.
2. An hypothetical explanation of that phenomenon is formulated.
3. One case is studied in the light of the hypothesis with the object of determining whether or not the hypothesis fits the facts in that case.

4. If the hypothesis does not fit the facts, either the hypothesis is formulated, or the phenomenon to be explained is redefined, so that the case is excluded.
5. Practical certainty may be attained after a small number of cases has been examined, but the discovery of negative cases disproves the explanation and requires reformulation.
6. This procedure of examining cases, redefining the phenomenon, and reformulating the hypothesis is continued until a universal relationship is established, each negative case calling for a redefinition or a reformulation.

Bogdan and Taylor (1975) argued from a different perspective that the existence of non-supportive cases is not in and of itself sufficient cause to discard an hypothesis. According to their view, *"coding procedures and criteria are by nature imprecise and impressionistic. Thus, it is not unreasonable to learn that some items contradict others. Moreover, people are often inconsistent in what they say or what they do as they move from one situation to another"* (p.87-88). They suggest that when non-supportive cases are carefully scrutinised initial contradictions may not be seen as such once proper attention is paid to the situational nature of subjects' perspectives.

Analytic induction expresses a holistic approach to data evaluation. That is to say, that it is not looking for simple statements or for linear relations of isolated variables pulled out of their context. This context has always to be referred to, every time a new case is examined, is continually present in the process of analysis. **Patton (1980, p.325)** has put it like that: *"It is the ongoing challenge, paradox and dilemma of analytic induction that we must constantly moving back and forth between the phenomenon and our abstractions of it, between the description of what has occurred and our analysis of those descriptions, between the complexity of reality and our simplifications of those complexities, between the circularities and interdependencies of human activity and our need for linear, ordered statements of cause effect"*.

Analytic induction emphasizes two processes that should be present in order valid and sound outcomes to be achieved.

First, when patterns are described, linkages identified, and accompanying explanations are furnished, it is essential to look for competing or rival themes or explanations. When considering rival hypotheses, there is no need to rush to disprove them. Instead, a more fruitful approach is required. Looking for data that support the rival hypotheses, might open to the analysis an unexplored path. But even when these data are not there, other ways of organising the data should be looked into. It may occur that another classification scheme sustains the rival hypotheses. When both are being studied, i.e.,

CHAPTER 4

RESEARCH METHODOLOGY

4.1. INTRODUCTION

The second chapter pointed out that, despite the plethora of writings on the role of the Board, it is still unclear what Boards actually do and how their work is evaluated by different groups of stakeholders such as governmental officials, executives, employees, and others. To map out Board's decisional activity over a significant time period when a major change is getting implemented in the organization would in practical terms help highlight the nature of its role. Also the disaggregated type of analysis of views on strategy of different Board-members may offer various perspectives concerning this concept. Thus, by focusing on the concept of strategy along different decision-areas and across different stakeholders, by exploring the dynamics of the relationships between them, one would delineate the nature of the Board's strategic contribution and ultimately how strategies are actually formed in a public enterprise.

The chapter consists of two parts: The first part includes a description of the seven stages followed by the research in order to achieve its purpose. The second part discusses the methodological implications of the research findings.

4.2. STAGES OF THE PROJECT

The project involved seven stages which are outlined in this chapter. At each stage, the theoretical background is offered, followed by the applied methods and techniques. A list of these stages as well as a brief statement of the purpose of each stage is offered below:

First stage: Background Information (pre-field work): This stage involved the collection of information concerning the enterprise's Strategic Plan, that is, the plan itself and organisational reports commending upon the progress of the Plan as well as additional information from external sources.

thinking about all logical possibilities that could be considered, and looking for other ways of organising data, then the final set of findings will have been tested against a rigorous scheme that lends credibility to the explanations yielded.

Second comes the search for negative cases. By considering instances or cases that they do not fit into the pattern already identified, analytic induction rules out hasty conclusions and forces for new propositions to be formulated and tested. In Denzin's own terms: *"In the search for universal propositions, the user of this method seeks cases that more severely test a theory, and until the propositions cover every case examined, the theory remains incomplete"* (Denzin, 1978, p.27).

Analytic induction substantiates the logic of theory development. Therefore it was assumed that such a method would assist the move from *"sensitizing"* interview accounts to the level of theoretical synthesis described above. The way this method has woven the data from the two different sources used is to be presented in **Chapter 8**.

3.5. SYNOPSIS

The present chapter has argued about the appropriateness of the selection of the case study method to achieve the research purpose.

Thus, the case study was selected because two types of processes were to be investigated: First, the sequence of events, over a long period, pertaining to the strategy development process; and second, the role of the Board-members and their influence on strategy development. The latter implies an emphasis on inter-relationships and interactions, things that were considered important for studying this phenomenon.

Finally, the ultimate purpose of the research, that is theory-building, concerns the organising of the data so as to preserve the holistic and unitary nature of the phenomenon being studied. The case study is the technique that best applies to this purpose.

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Second stage: Analyzing Board's Past Decisions: It involved: (1) The classification of all the decisions made by the Board and recorded in organizational archives (over the period 1980-1988); this classification resulted in a list of 49 decision-areas. (2) The construction of histograms, to illustrate the frequency of decisions within these decision-areas (streams of actions) over the study's period. The histograms themselves and the patterns revealed characterised the flow of the organization's activity in each decision-area over time. Strategies were seen as patterns or regularities in these streams and a first attempt to trace their origins, the actors involved, and specific details of their content was made.

Third stage: Interviewing the Members of the Board: Over a period of a month, 8 out of the 9 members of the Board were interviewed. The interviews produced a total of 20 hours of tape-recorded information. The accounts produced by interview data were not to be treated as a simplistic "*face-value*" information. A further stage in the analysis process assisted in the assessment of the validity of the information provided and is outlined below.

Fourth stage: Cognitive Mapping: The understanding of how strategies are perceived by the Board-members in a public organization -by analysing strategic thinking in context- necessitated the construction of individual maps. An aggregated map comprising all the Board-members arguments would not display the richness and the uniqueness of the presented individual arguments. Thus, the Board-members' cognitive maps were constructed and analysed individually.

Fifth stage: Matrix Mapping: Most data regarding "*strategic*" decisions, as they had been defined by the decision-makers, were encoded in a format suitable for the application of a matrix technique. In a following meeting, strategists were presented with this matrix and were asked, to fill in values best representing the strength of the perceived relationships between the elements involved. It was hypothesized that the analysis of these two sources of data (stages 4 and 5) at the strategists' micro-level would reveal information (1) about the way in which actors defined their world and comprehended important issues, and (2) about the validity of the methodological tool employed for the representation of the actors' schematic knowledge.

Sixth stage: Explaining Individual Data; Looking for Patterns: Stages Four and Five dealt with (i) presenting the strategists' cognitive maps at the individual level, (ii) revealing the structure of the causal assertions used to identify strategic decisions, and (iii) defining the meaning of strategy according to each member of the Board. This sixth stage involved: (1) The tracing of patterns across maps, both influence diagrams and the maps derived from matrices; (2) Comparisons to reveal similarities and differences.

That is, in order to describe what strategists thought about strategy, the chains of reasoning depicted in the influence diagrams were used, as well as the cause-effect relationships deriving from the matrices. These two data sources were combined and an attempt was made to go deeper from the stated rationales to the hidden assumptions behind them, to understand why some very important issues to some strategists were ignored by other. This aim was based on all empirical evidence in hand, to reveal the meaning each strategist assigned to the concept of "*strategy*".

Seventh stage: Theory Building: The case study used two types of data, that is (1) Interview accounts, and (2) Documentary sources against background information from within and the outside of the enterprise. The aim of this final stage was the building of an explanatory theory based on this material. This theory would specify the relationships among a set of variables or concepts identified in the data, and would help to advance our understanding of the way in which strategies are formed in a public sector organisation.

4.2.1. About Methods

Methods are the instruments adopted to identify and analyse aspects of the phenomenon under study; the value of methods "*exists in their suitability in helping achieve this task*" (Blumer, quoted in Hammersley and Atkinson, 1983, p.6). This research uses a variety of methods in order to achieve its objective to understand and explain strategy formation processes in a public enterprise.

Strategy formation will be looked into in relation to what principal actors (the Board-members) think about strategy, and what the organization "*did*" in terms of decisions taken to implement a major change. Thus processes of change will be analysed "*in context*". These processes will explain why and how the content of particular decisions was seen by the members of the main Board as strategic, in relation to factors of the business, economic and political environment which characterized the context of this particular enterprise over a period of nine years. The important and unusual feature of the main Board was the membership of its participants. Senior managers, governmental officials and employees' representatives all contributed to making decisions concerning the implementation of strategy and it was their perceptions, interactions, as well as endeavours for power and control that played an important role for the attainment of any results which were sought on the part of the enterprise.

In detail, the study will explore two linked continuous processes. First, all the decisions made by the Board (comprising those referring to the implementation of the strategic plan), are examined over a period of nine years (1981-1989). This period was marked by substantial changes in the company's internal and external environment, such as changes

of political party in power, introduction of a supervisory Board to the enterprise, and the participation of employees' representatives in the main Board. Second, patterns of strategic decisions, as seen through the eyes of the members of the Board, rationalising why some decisions are defined as strategic, will be depicted and analysed. These two data sources will be linked in the final stage of the analysis and a number of propositions about strategies and their formation will be drawn.

4.2.2. First Stage: Background Information (Pre-Field Work)

The first stage involved the collection of background information. Once the research problem had been formulated, material concerning the Strategic Plan itself, the associated Business Plan, and studies produced over the years for the enterprise by external consultants, was collected from the organization's library (employees have free access to it). Organisational reports commending upon the progress of the Plan, distributed to organization's departments through the Department of Planning and Organization were available to me since I was involved with investments proposals (concerning the track modernization).

Information was also obtained from external sources in order to sensitize the research to potentially fruitful lines of inquiry during the interpretation of the findings. These sources were:

- A conference organised by the Technical Chamber of Greece in which Board-members, officials of the enterprise, representatives of various administrative bodies, academics, and the union of transportation engineers, highlighted issues facing the firm and stressed the importance of the modernisation of the railway. The conference took place towards the end of the pre-field work (April 1989) and was tape recorded.
- The proceedings of a meeting organised by the Department of National Economy in which members of the representative bodies and the main Boards of the three bigger public enterprises participated, in order to discuss the progress of socialisation, its shortcomings and to make proposals for required modifications in the existing institutional framework.
- Some informal interviews with people related to the setting, either in the past or during the period of the study; they were either ex-Board-members or governmental consultants.

Summarised information concerning the enterprise and its strategic plan is contained in **Appendix A** (Organizational Background) and **Appendix B** (Implementing the Strategic Plan).

4.2.3. Second Stage: Analyzing Board's Past Decisions

4.2.3.1. Purpose

The creation of histograms illustrating the frequency of Board's decisions over the study's period, concerning different decision-areas, would enable the identification of the organization's activity in each decision-area over time. Strategies may be perceived as patterns or regularities in these streams of decisions. When existing patterns were disrupted, this might indicate that change was initiated. Whether this change was intentional, random, or imposed by an external constituent would be inferred in relation to how key-people accepted and supported it and turned it to confirmation that eventually was indicated by a routinised pattern. This would be further discussed with the members of the Board at the interview stage.

4.2.3.2. Theory

Conducting an analysis of the Board's decisional activity is directly related to the actions the organisation has undertaken. This is because the Board is by law responsible to formulate and implement strategy and additionally, in principle, has a perspective broad enough to see all the functions in terms of the enterprise's overall aim. The problem is that there are also decisions made and actions taken by the Board pertaining to its legal responsibilities and ties with administrative bodies. Which way, therefore, can someone disentangle strategies from this activity, when it is known that it is through the making of the specific decisions that strategies evolve and develop?

As some researchers and theorists have argued, organization strategy arises through a stream of decisions and reflects an aggregate pattern of behaviours that occur over time (Mintzberg et al., 1988; Quinn, Mintzberg and Waters, 1988; Fredrickson, 1983; Mintzberg, 1990). Thus, if strategy is viewed as a composite of sequential decisions, then, methodologically, a strategic process research should *"concentrate its efforts on how organizations make and combine strategic decisions"* (Fredrickson, 1983 p.571). Therefore, a method of illuminating graphically the way in which groups of decisions (decision-areas) unfolded over time could provide additional hints, as to whether the peaks and valleys of these graphs had any correspondence with major events in the organizational and external environments. as Mintzberg (1990, p.184) puts it, *"the organizations must function not only with strategy, but also during periods of the formulation and reformulation of strategy which cannot happen instantaneously"*.

Mintzberg's view is that strategy does not appear at a point in time, fully formulated and ready to be implemented. Rather important aspects of strategy formation, including incrementalism and emergent strategy, need to be elaborated in various contexts.

Furthermore, as Pinfield (1986) has argued, where there are multiple issues and participants, adaptation will occur more as a consequence of application exercises that expose norms, which then guide the thousands of small actions that constitute regular operations. He notes that *"for example, if in any one year there are approximately 300 staffing decisions in a senior executive group, each represents a small opportunity to reflect marginally changed norms. Collectively, over one or two years, the effect could be substantial -even though no overt decision was made to accomplish such a change"* (p.384).

4.2.3.3. The Applied Technique

Permission to use the records of the Board's decisions was granted easily, due to the help given to the author by the Assistant General Manager.

All the decisions made by the Board and recorded in organizational archives (over the period 1980-1988) were classified in two sequential stages. First, the decision headings as taken from the documents were used and this produced a set of 98 decision headings. At the second stage, these decision headings were classified into decision-areas. A set of 39 decision-areas was thus constructed.

There were several reasons for using this specific documentary evidence to examine whether it exhibits patterning: (1) These documents are provided for organizational use since they render Board's executable decisions; thus, they are strictly accurate since they will be subjected to a great deal of organizational scrutiny. (2) They have a standardized format which consists of: (a) the date in which a certain decision was taken; (b) the decision-heading; (c) a brief description of its content where there is mentioning of the department(s) that initiated it; (d) the decision outcome, that is the ratification or the rejection of the proposal; and (e) authorization to the General Manager or to Heads of Departments for further actions. (3) These documents could be considered as *"neutral"* since no causal reasoning is included and they do not aim at convincing external parties (Government, the public, etc).

As said before, the classification of decisions proceeded in two stages. The criteria for this second classification derived from the system of authorization which described the accountabilities and responsibilities of Departments and Boards in the enterprise. To strengthen the reliability of the second classification, a second coder (a PhD student at the Cranfield Centre for Transport Studies) performed the same task. The intercoder

reliability reached a level of 80%. Because of the differences encountered, a decision was made to increase the final set of decision-areas by also including those over which no agreement was achieved. The result was a list of 49 decision-areas which in a simple form was to be presented to the strategists during the interview phase (stage three) of the project, in order to extract the ones that each Board-member perceived as strategic.

Histograms were created to illustrate the frequency of decisions within the identified decision-areas (streams of actions) over the study's period. The histograms and the patterns revealed characterised the flow of the organization's activity in each decision-area over time. Strategies were seen as patterns or regularities in these streams and a first attempt to trace their origins, changes in their patterns, and specific details of their content was made. It should be pointed out that the decisions examined did not only refer to final choices but usually included all the development activity that preceded (i.e., set up a committee to gather information on a topic, etc.). When existing patterns were disrupted, this might indicate that change was initiated. Whether this change was intentional, random, or imposed by an external constituent would be inferred in relation to how key people accepted and supported it and turned it to confirmation that eventually was indicated by a routinised pattern.

The issue of making decisions is presented here in terms of different areas involved and of different patterns of activities within these areas. The outcome of this stage of the project is contained in **Chapter 5** (Analysing information on the Board's decisions; Interpreting the Board's functioning). **Appendix D** (Coding information from the Board's records) contains the processed material.

4.2.4. Third Stage: Interviewing the Members of the Board

4.2.4.1. Purpose

Purpose of this stage was to address the meanings attached to strategic decisions by the Board-members. This stage adopted an interpretive perspective of organizational decision-making and presented the way in which interviews with the Board-members were conducted.

4.2.4.2. Theory

4.2.4.2.1 Tracing the Meaning of Actors' Perceptions

The qualitative research literature, by depicting the actors' point of view, stresses the importance of revealing the actors' personal worlds and describing them. Numerous studies support the argument that the meaning of a concept is not inherent in it; rather,

the actors actively construct their reality by selectively attending to some issues while ignoring other. Those selected are subsequently interpreted and infused with meanings (Kielsler and Sproull, 1982; Daft and Weick, 1984; Hambrick and Mason, 1984). First-hand contact with people and setting concerned is a valuable undertaking. Hammersley and Atkinson (1983) argued about the expressive power of language in providing descriptions, explanations, and evaluations of almost any aspect of this world. Although they defined context only in terms of the account's context (who produced it, for whom and why), they emphasized the importance of commitment to the use of accounts which would reveal not only information about their content, but, also, the perspective through which they have been brought up. In their own terms: *"Accounts are also important, though, for what they tell us about those who produce them. We can use the accounts given by people as evidence of the perspectives of particular groups or categories of actors to which they belong. Indeed, knowledge of these perspectives may form an important element of the theory being developed... Separating the question of the truth or falsity of people's beliefs, as currently assessed, from the analysis of those beliefs as social phenomena, allows us to treat participant knowledge as both resource and topic"* (p.106-107).

The assumption that underlies this stage of the research is that the Board-members' accounts are real. In the same vein, Silverman (1985) regarded interview data as *"displays of cultural realities"*. His position is grounded on *"realism"* that considers the *"social context"* and individuals' perceptions as entities that are not reducible to one another. The accounts of persons whose experience is under investigation exhibit the patterning or combinations of elements stemming from their own cognitive universes. Insiders' knowledge would reveal cultural forms and their functioning and provide a ground from which to look further for other social norms or practices.

This study, dealing with the Board of a public organisation, deals in essence with individuals that may have multiple characteristics. These characteristics may vary significantly across members (Hambrick and Mason, 1984), either because of their different occupations within the same organization or because of the kind of training they have experienced (Bogdan and Taylor, 1975). Given their individuality, the Board-members may bring somewhat unique perspectives to processes used to guide the organisation (Ireland et al., 1987).

4.2.4.2.2. Problems Associated with Actors' Accounts

Though participant-recall is the dominant method for studying decision-making processes, Wolfe and Jackson (1987) noted that strategic decisions are difficult to grasp because they are protracted, are often made in groups of shifting sizes and compositions, and are often the results of a series of other decisions made in different

parts of the organization. **Schwenk (1988)** and **Huber and Power (1985)** have outlined several invalidating features emanating from either the interviewee or the interviewer in the data-gathering stage. Within the interviewee's memory process, there lies a tendency to simplify, invent, rationalize and conventionalize past actions. Subjects use to simplify the pictures or word-stories to which they were exposed while adding unique material that brings their final remembrances into agreement with pre-set attitudes and beliefs. The ambiguities, complexities and time-spans involved in the strategic decision-making process render those tendencies even more exaggerated. The strategic decision-maker's environment is far less deterministic than the one faced in the organization's operating level and any number of known, unknown and emerging causal relationships can exist within an organization. **Wolfe and Jackson (1987)**, reviewing the literature, noted the following features attributed to strategists' recall: (1) They restructure their recollections to enhance their own positions while weakening the positions of their opponents. (2) They over-estimate their efficacy (unless they fail). (3) They engage in wishful thinking. (4) Their recollections are influenced by the phenomena of inconsistency, reduction, causal simplification, imaginative reconstruction, and pure memory failure.

Considering the interview as a type of social interaction, **Jones (1985)** argued that the actions the respondents take (what data, for example, they give the researcher) depend on the meaning and significance they attribute to the particular research situations they are in. In the same way, people develop over their lives a personal framework of beliefs and values with which they selectively and subjectively build meaning and significance in events. It is this framework or schema and its "*real consequences*" for action that the qualitative research is interested in learning about.

Thus, she suggested that a central part of the theoretical framework a researcher applies when preparing for, and indeed analysing, depth interviews, must be the awareness of the factors which affect the data the interviewees provide. Human beings present different personae in different situations, to different audiences. In the giving of accounts to others, they are concerned not only with "*intelligibility*" -making their actions comprehensive- but also "*warrantibility*" -the legitimation of action and the presentation of a credible and legitimate "*self*". She described possible interviewees' behaviours ranging from masking the important issues or treating the researcher with a defensive and antagonistic manner, to presenting an image of dutiful intelligent citizen that pleases the researcher by saying what they think (s)he wants to hear. She recommended essential skills on the part of the interviewer in order to overcome these difficulties. Expression of interest, encouragement and warmth by eye contact or facial expression coupled with enough time and space for answering so the respondents may feel confidently (**Spradley, 1979**).

Moreover, by listening to what seems to be significant to the respondents in the research topic and explore this further, the researcher is well equipped to positively respond to unforeseen situations. **Hammersley and Atkinson 1983**, call it "*the reflexive interviewing*" and argue that the researcher should be aware of the data that alert he or she has misread significance and could change the line of probing. It is needed to know how to judge when someone is getting data that are off the track of what is interested in, be sure that one is not just making this judgement on the basis of his own preconceptions and missing data that are relevant to the research topic as construed by the respondents; and then how to bring them back gently. It is necessary to check meaning when one is not sure that has understood and not assume too quickly that has understood. And finally, to think very carefully about the types of people that are to be interviewed, the likely range of their experiences and possible responses and adapt the approach and self-presentation appropriately.

Interviewing "*elites*", that is people with power, presents additional difficulties. Such people (and this is the case in this specific study) being appointed or elected to their posts have considerable social and political skills and are often unwilling to reveal personal and political data to others. As **Cannell and Kahn (1968)** argued, getting access to and being taken seriously by such persons is clearly helped by being of equal status and/or by appropriate self-presentation by the researcher.

4.2.4.3. The Applied Method: Asking Questions

4.2.4.3.1. Sample Design

In this study, the whole population of the decision-makers concerned with the implementation of the strategic plan was selected. This population consisted of three different groups; employees' representatives, senior managers, and governmental officials. The sample size (nine people) permitted a detailed analysis to be conducted at the individual level (**Chapter 6**). Because of the high status (in terms of organisational hierarchy) of the people involved, a decision was made to conduct individual, in depth, semi-structured interviews instead of group discussions or group interviews. A further consideration was that the research project was undertaken during a highly sensitive pre-electoral period which might have influenced the arguments expressed in a group discussion and turn them into statements stemming from political confrontation or ideological differences.

4.2.4.3.2. Background Knowledge, and Interviewer's Identity

The preliminary interviews conducted in the field (with the Assistant General Manager), that is before beginning the actual data collection phase, helped the author to generate

many cues as to how to design the interview process with the strategists. It was then that she decided to conduct individual interviews since she understood that political tensions were great in the outset because of the forthcoming elections and the accusations against the political party in power. A rough idea about the characteristics of those to be interviewed was also shaped, based on the Assistant General Manager's comments about them. His comments were centred mostly on the employees' representatives and their negative role on the Board and this was surprising since his position in favour of this institution (before it got established) was well known. In the rare cases he mentioned state officials, he spoke about them in a rather favourable view, though he did not provide details about specific activities they had undertaken as members of the Board. On the other hand, referring to the acting General Manager, he noted his strengths and weaknesses and pointed out to the benefits that the organization might acquire if the General Manager's initiative would finally get through. In the preliminary interviews it was found that what seemed to bother the Assistant General Manager at most was the selection, on the part of trade unions, of the employees' representatives (to be included on the voting list) which was -in his view- below any expectations, as far as their competencies were concerned.

The Assistant General Manager's views were not taken for granted. However, they alerted the author to inquire about roles of the various groups, as well as about interactions between them, in order to delineate the Board's behaviour and decision-making conduct and to improve her knowledge of the setting.

Being an insider and having the Assistant General Manager's agreement on conducting this research, the author was introduced by him to the General Manager who showed the same positive attitude towards it. All these, helped the author to gain access to organizational archives and, in a way, to strategists, though it did not automatically increase co-operation with governmental officials nor with employees' representatives. The author had to overcome difficulties similar to those encountered by any other interviewer and reported in the literature, and had she not been equipped with ways to cope with various situations, the interview would have exhibited serious flaws.

4.2.4.3.3. The Selection of the Physical Setting

Because the physical setting might influence the data collected, and because one of the author's intentions was to make the respondents feel at ease, she arranged for the interviews to be undertaken individually, in settings familiar to them. For managers and employees' representatives it was the organization's headquarters, while for administrators their offices in ministries or consultancy firms. As it turned out, interviews with employees' representatives proved the most difficult of all since there were too many interruptions, on the part of other employees who frequently entered the

room asking for some favour or discussing some organizational matters casually. Employees' representatives seemed to consider these interruptions -despite their frustration shown sometimes openly- as necessary, part of a process that offered them recognition of their status as well as an opportunity to get informed on issues that otherwise would remain unknown to them. However, the type of problems that they were dealing with was so narrow, that one might wonder whether this was an appropriate conduct for a decision-maker participating in the enterprise's Board or for a unionist looking not to dissatisfy his electorate. In one case, as a result of this situation, the interview had to be repeated in the same place on a Sunday morning.

4.2.4.3.4. Getting Access

The issue of getting access in the setting was resolved easily as far as meetings with managers and employees' representatives were concerned. On the other hand, both governmental officials held a rather "*closed*" attitude in the author's first attempts to approach them, invoking various reasons for not granting access. The author had to ask to be introduced to them by organizational members that were associated with them. For instance, an organizational member -with whom the author had a very good collaboration when conducting a technical study- who was participating on the Board of the Technical Chamber of Greece (one of the governmental officials was also a member on that Board) introduced the author to him and gave strong references. After that, the author managed to arrange for a meeting with him quite easily.

One of the explanations for the administrators' attitude might be the sensitive period in which the research was carried out. As stated before, the government had come under attack from a considerable part of the press accusing it of involvement in economic scandals. State officials may have feared that questions asked by an "*unknown*" researcher and on an unknown topic might have been troublesome. Therefore, they necessitated those references on the part of the people that asked for their collaboration with the author.

This draws attention to a particular problem of access to high-status people who represent powerful constituencies and shows how matters that are outside the researcher's control may intrude, and affect the process of getting access.

4.2.4.3.5. Conducting the Interviews

Over a period of a month, eight out of the nine members of the Board were interviewed and all but one accepted to have their interviews tape-recorded. The interviews produced a total of 20 hours of tape-recorded information.

(i). Gaining Acceptance and Communicating Research Objectives

Having obtained access to the setting, the author proceeded to the interview design. When entering the interview phase, she had two objectives in mind: (1) To state the research purpose in clear, though not wide, terms; and (2) To let strategists develop freely their arguments and to be able to follow lines of inquiry that might be revealed from them. Necessary condition for all these was the establishment of a rapport with the strategists that would create an atmosphere conducive to openness.

To achieve this, the author had to gain their trust and to minimize her influence on the production of data by monitoring it, and as far as possible, by bringing strategists' reactivity under control (Hammersley and Atkinson, 1983).

Also, the author was equipped with two things when she started conducting interviews: (1) She had a list containing 49 decision-areas, that is the list which derived from the analysis of the Board's decisions. (2) She had a list of issues to be discussed; this list was a result of (a) the study of the organizational plans and reports, and (b) some informal meetings she had with the Assistant General Manager.

In order to deal with the first objective, when conducting the interviews, the author stated from the beginning the aim of her research in wide terms, because she felt that it would confuse things if she stated her interest in studying the way organizational strategies form; thus, the author decided to inform them that she was studying the implementation of the modernization plan inaugurated in 1980 and she concentrated her attention on decisions taken by the Board. She also thanked them for giving her, in the past, the opportunity to start to conduct this research and, now, the possibility to conclude it by studying the implementation of a real plan in the under-researched public sector.

Establishing rapport with the strategists was facilitated by the expression of the author's gratitude for offering her the opportunity to conduct postgraduate studies in the railway management field (all leaves, either educational or other, have to be granted by the Board). The casual exchange of information on the progress of the author's studies helped "*break the ice*" and created a friendly atmosphere.

(ii). Asking Questions

Dealing with the second objective, the author followed the following process. In the beginning of the interview, the questions were of a general nature, such as:

- *"Could you describe a typical session of the Board?"*
- *"What does the agenda usually contain?"*
- *"Who usually introduces the decisions to the Board? In which way?"*
- *"Which way the Board reaches a decision? Is consensus desirable?"*
- *"What do you think, in general, about the Board's reorganisation and the employees' participation?"*

The aim was to enable Board-members to talk about what was of concern to them, without forcing them to respond to the author's preconceptions or interests. Thus, when an issue that seemed to be especially sensitive arose, then the inquiry centred its interest to it as well. As the interview was proceeding the questions became more specific and focused on the list containing the 49 decision-areas which was presented to them. The following questions illustrate this point:

- *"Could you give me an idea what these decision-areas are concerned with?"*
- *"Would you say that a decision-area contributed positively or otherwise to the entire process of implementation?"*
- *"In your opinion, which decision-areas are the most important ones, the ones that you would define as strategic, and why?"*
- *"What are the factors that most influenced the strategic decisions you identified earlier?"*
- *"Would you say that a (certain) factor is located in the organization's environment?"*
- *"Which do you think are the repercussions of a (certain) decision-area?"*

The following sections describe in detail the problems experienced by the author, when facing the problem of reactivity, and argue that sometimes this cannot be eradicated; instead, it should be reflected upon and further steps in the data collection phase should be undertaken, providing additional tests on them.

(iii) Problems Encountered During Some Interview Processes

(a) Controlled Phases of the Interview: The Issue of Inequality

One of the state officials seemed reluctant to discuss in length and deliberately resisted to detail her short answers. Though she answered most of the questions directly, she preferred to close up the interview rather quickly, recommending the author to meet other people from within the ministry, specialised in strategic planning. Despite the fact that the author explained to her that it was not the opinion of experts that interested her but of people involved in the real process of making decisions, she hardly changed her attitude. Since this case was the only one encountered, warrants further discussion. As the nature of the questions that were asked did not touched the private world of this respondent, one may assume that this sense of alienation was due to a fear that her statements could be monitored by someone whose knowledge in the field could be superior to hers and who was also an organizational member too. The fact that the author was conducting doctoral studies in the field might have created an atmosphere where one party (of the same gender too) felt unequal, because the author had not expressed any opinion about her statements during the interview. The problem of inequality was also raised by Denzin (1977) who noted that these feelings during interaction between an interviewer and a subject may create sources of invalidity. The final section of this chapter describes the way the author used to deal with this issue.

(b) On Vague Statements and Loose Interest

There were times that vague statements were received on the part of the respondents. That occurred when strategists tended to end suddenly a line of inquiry -especially when modernization works were at issue- by saying "*Oh! All that is already known to you*", meaning probably that the author's occupational and professional background were enough to help her understand it. At this point, she had to stop and make clear the fact that it was their view that was essential to her and not anybody else's, and that surely their perspective might be different since they had a wider view of the organization. Other times, when other topics were involved, the author asked more questions, in order to clarify their statements, or she pin-pointed to contradictions (in a gentle way), in order not to let strategists provide forged explanations.

Other times, the strategists were losing interest in some questions. This occurred when financial topics were involved, that is budgets and procurement policies. It seemed that a routine process was at issue which did not attract any more their attention. The author used to leave the question unanswered at this point though she attempted to motivate a reply in a later point of the interview, by slightly paraphrasing it.

4.2.4.3.6. *Other Features that Might Have Invalidated the Data*

(i) On Recall Validity

Researchers have outlined several features that might invalidate the evidence collected. Within the interviewee's memory process there lies a tendency to simplify, invent, rationalize and conventionalize past actions (Schwenk, 1985). Also, interviewees tend to *"simplify the pictures and word stories to which they were exposed while adding unique material that brought their final remembrances into agreement with their pre-set attitudes and beliefs"* (Wolfe and Jackson, 1987: p.124). Moreover, this tendency can be more exaggerated when people attempt to remember how strategic decisions were made, because of the ambiguities, complexity and time spans involved in the process (Wolfe and Jackson, 1987).

To compensate for memory failures and distortions, this study incorporated into the interview design questions covering a wide range of factors that might have affected strategy (*"aided recall"*, in Wolfe and Jackson's term) which with a special caution (not in the form of leading questions) were asked to the strategists. Evidence collected through the organizational archives, the preliminary interviews with the Assistant General Manager, all helped create a pool that catered for these research questions.

(ii) On Justifications/Explanations

Reasoning processes represent an unknown combination of attempts for justification and explanation (Bettman and Weitz, 1983). The difficulty consists in that one should disentangle the two when looking for accurate attributions. In this study, there were two reasons that might have helped to overcome the problem. The first was that because the author was an insider, the desire to be accurate on the part of strategists may have prevailed, since they thought that her knowledge of the organization (derived from her previous experience and her engagement in the research) would subject their attributions to scrutiny, might have functioned as an alert to them. Furthermore, because the author informed the Board-members, in the beginning of any interview, of her intentions to interview the whole Board, this might made them aware of the likelihood that their statements might be contradicted by others, leading thus to accurately gauging the causes of the strategic decisions.

Yet, by the same token, one may argue that awareness that their attributions might be subjected to scrutiny, either by the researcher or other members, is likely to have given rise to a concern to ensure the plausibility of the causes given in their self-serving attributions. In other words, the strategists might have used lines of reasoning that

alleviated them from responsibilities (ego-defensiveness plays an important role in that case).

To deal with this possibility, when the author judged intuitively whether a justification was provided, she paraphrased the question and asked it again in a later instance. When the same answer was given, this enhanced the chances that what had been given in the first place was an explanation. Otherwise, the topic concerned and the answers provided were treated as a field of inferences about roles and behaviour.

4.2.4.3.7. Checks on the Data

This final section concerning the interview phase deals with the checks the author carried on the strategists' accounts that she considered as inefficient or short. Analysing data for the effects of the researcher is not a simple matter since the impact that any other audience the actor might be addressing consciously and subconsciously should be included (Hammersley and Atkinson 1983). The author concentrated her attention on the interview account produced by the state official who exhibited the lesser receptivity. Because the account produced was too short she looked for another source of information as a means to comprehend this issue. She used the Board's minutes of the two preceding years which transcribed the Board's sessions. As revealed, the contribution of this Board-member to the discussions on the Board was minimal. In the rare instances, she addressed an issue, she usually followed the Assistant General Manager's proposals. Therefore, the short answers of her interview were not taken as an invalid characteristic of the interview; they were rather seen as a characteristic of decision making-processes which occurred on this Board.

4.2.4.3.8. Evaluating the Recorded Information

The accounts produced by interview data were not treated as a simplistic "face-value" information (Patton, 1980; Jones, 1985; Hammersley and Atkinson, 1983). A further stage in the analysis process assisted in the assessment of the validity of the information provided. The rationales about strategic decisions and their context were presented in cognitive maps that enabled the author to deduce the ways in which biases of one kind or another may have intruded in this source of information. Cognitive maps, given the number and the positioning of concepts within chains of reasoning, help to decipher the meaning of the strategy concept by focusing on the study of their articulation. Thus, by treating respondents' knowledge both as resource and topic along the dimensions of providing information and unfolding "perspective" analysis, this study assessed two separate lines; (1) people's beliefs, and (2) the analysis of those beliefs as social phenomena (Hammersley and Atkinson, 1983).

The outcome of this third stage of the project is summarised in **Appendix E** (Rationale for Links) and constituted the material to be processed for the construction of the cognitive maps that followed at the next stage. An "*in context*" explanation of the individuals' data (that is an explanation in which the Board-members' background is highlighted as well as further information not represented in the maps but stemming from the interviews) is offered in **Chapter 7** (section 7.2).

4.2.5. Fourth Stage: Cognitive Mapping

4.2.5.1. Introduction

So far, the preceding sections of this chapter have examined the processes of obtaining secondary data, entering the field, and gathering primary data from in-depth interviews (**Figure 4.1**). In this and the following section, the techniques (tools) used for analysing these data are described. It should be emphasised that in this case "*data analysis and interpretation*" are intertwined concepts which aim at making sense out of the evidence in hand. This results in identifying themes by highlighting relationships between concepts, as they are suggested by the data. Stages Four and Five deal with the techniques adopted and argue about their appropriateness. Stages Six and Seven refer to the results of the analysis.

4.2.5.2. Purpose

The purpose of this stage was to understand how strategies are perceived by the Board-members in a public organization. This involved analysing strategic thinking in context and was made possible by the construction of individual cognitive maps. As researchers have noted, in a quantitative technique, this stage would correspond to the statistical operations applied on data that has been classified using a particular codification (**Cossette et Audet, 1992**).

4.2.5.3. Theory

4.2.5.3.1. Introduction

Cognitive maps are graphic representations providing frames of reference for what is known and believed (**Fiol and Huff, 1992**), locating people in relation to their informational environment. Researchers argue that a cognitive map is not intended to reflect the way of the subjects' thinking (**Eden, 1992; Cossette et Audet, 1992**), but rather to structure and simplify thoughts and beliefs, to make sense of them, and to communicate information about them (**Fiol and Huff, 1992**).

A cognitive map is a semiotic product and not the expression of an objective reality to which an individual's account corresponds. Also, it is a product that is partial since an individual has a limited cognitive capacity (**Axelrod, 1976; Weick, 1979**) and partisan because the aspects of this reality that are unknown to him are dependent on the characteristics of this individual and on the schemata of interpretation and expression that he already possesses (**Cossette et Audet, 1992; Fiol and Huff, 1992**).

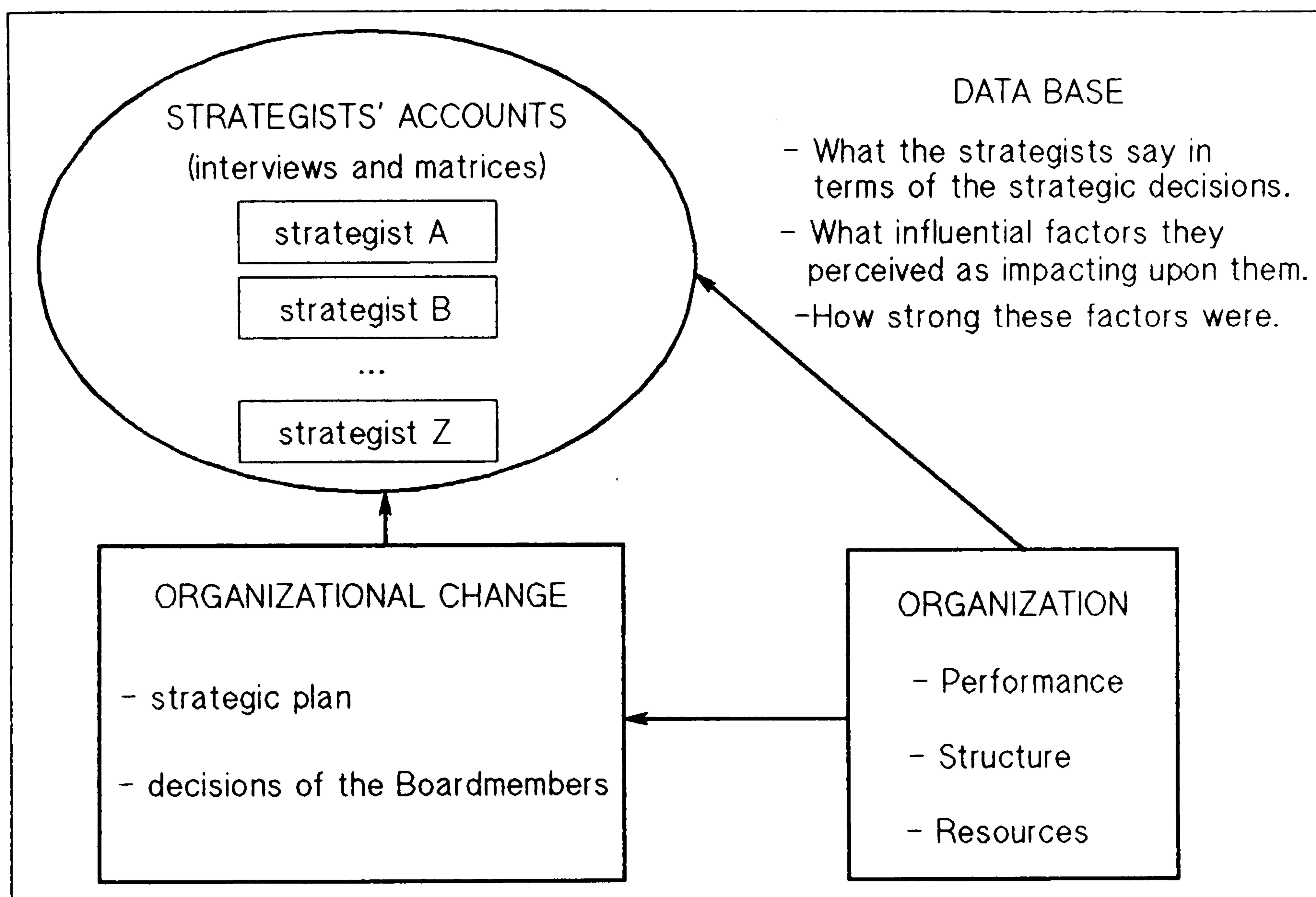


Figure 4.1: Fitting data-sources and questions into the study's framework

Huff (1989) pointed out to the wide range of topics in strategic management that have been explored through cognitive mapping and suggested that the focus should be on the subjects for which cognitive maps provide the greatest insight. According to her view, this technique is suitable for studying topics that are intrinsically cognitive and for explaining variance that is unexplained by other methods.

Apart from the use of cognitive mapping in management science, other disciplines also recognise the need to depict relationships between elements of interest. Modern

linguistics, a scientific discipline interested in the relations (articulations) of words (elements) in a language (system), rejects the view that language should be concerned with the correspondence between individual words and their meaning and it favours a relational view stressing the system of relations between words as the source of meaning. Mental representations of problems, issues, choices, and organizational environments, have been the subject of attention in psychology (Kelly's repertory grid is a widely used technique) and political science (Axelrod; 1976).

Researchers interested in the nature of processes of change (whether they are stable and routine processes or disorderly ones) have simultaneously considered three themes: (1) The contribution of multiple actors to decision-making; (2) The simultaneous existence and potential interaction of many different issues requiring the decision-makers' attention; and (3) The changing nature of "*what's at issue*", as the decision context itself evolves over time (Huff and Pondy, 1984). Their methodology was based on cognitive mapping and the final outcome can be seen as a depiction of "*whole chains of logic*" and the changes in the structure identified provided the basis to draw conclusions.

Other researchers (Eden et al., 1979; Eden et al., 1992) argued that cognitive mapping is a strong tool that may assist consultants explore policy-makers' thinking (that is, all the beliefs they have about the world in which they are making policy) and then to alter this cognitive reality. Models created permit the policy-maker to scrutinise his theories at three consecutive levels, leading finally the analysis to the exploration of "*matters of interest*" rather than to events and their consequences.

While Eden et al. (1979) used cognitive mapping to base their self-learning activity, Mason and Mitroff (1981) argued that cognitive maps may constitute a framework for argumentation analysis. Drawing on the work of Toulmin (1958), this framework would aim at surfacing the strategic assumptions (held by different stakeholders) and challenging them. Their main point was that in most organizations the structure of an argument is not contained within a single person. Thus, one dominant individual or group may literally own or control some of the backings or warrants (e.g. a belief in certain underlying business principles or expertise in statistical or accounting procedures); another group may control the data (e.g. market research data) while still another may control the claims (e.g. preferred policy outcomes) that derive neither from the data nor from the warrants of the other groups, e.g. the Board of directors. In their view, the proposed framework can serve as a paradigm for studying topics such as organisational communication, information flow, and power.

Researchers interested in the practical concerns of managers develop cognitive maps that may assist the latter in examining and improving managerial judgement over time. Most important, graphic representations help to divorce ideas from specific speeches,

making them more accessible to debate and modification (Fiol and Huff, 1992). Thus, actors make sense of changing environments and update the context in which decisions will have to be made. *"The maps in that case are the means by which change is detected or are the intervention tools that facilitate this change in appropriate ways"* (Fiol and Huff, 1992; p.274).

Other researchers study decision makers' cognitions and motivations and their impact on the processing of issues and the types of organizational actions taken in response to them. Linking individual cognitions to organizational actions assumes that the perceptual and interpretive processes of decision-makers are consequential for determining organizational level actions (Dutton and Jackson, 1987). The degree of consensus among decision-makers strengthens the link between individual cognitions and organizational action (Schwenk, 1984).

Weick and Bougon (1986) describe organisations as *"cognitive maps"* which, if transformed, could induce organizational change. Cognitive mapping in this case represents an *"epistemological structure"* around which individuals organize their experience.

Isabella (1990) noted that understanding the cognitive basis for responding to changes, requires understanding interpretations and interpretative phenomena. She pointed out that studies concerned with those issues have aligned roughly mainly into two groups, each of which has a different and distinctive interpretive thrust:

(1) There is one group that has examined interpretations in light of theory-driven cognitive constructs with an emphasis on imposing order on past or present events. Attention, recall that begins the process through which people label and attend to salient information, and pattern recognition are some of the significant findings of this stream (Schwenk, 1985; Nisbett and Ross, 1980).

(2) The second group has examined the order and structure of specific interpretations through cognitive maps, prototypes and scripts.

She asserted that only a few studies have examined interpretations overtime, identifying not structural properties but similarities in points of view that guide the attribution of meaning and significance to specific organizational events. In her view, interpretation is defined not as imposing structure but as translating events and developing frameworks for understanding.

Thus, the focus in this interpretative stream of research is the articulation of organizational members' collective views (cognitive logic threading) on particular organizational occurrences.

As argued in the preceding paragraphs, these functions of a cognitive map reveal the cognitive processes of key decision-makers and may represent an important mechanism for organizational decision-making. The graphic representation of the Board-members' perceptions about strategy may depict the factors on which decision-makers focus their attention and identify their articulations, which, in turn, may influence the ways decision-makers dealt with and reacted to different decision settings. The present study will look into individual maps. Of course, it is unlikely that people will share identical maps. A lack of complete agreement across individual maps opens up the possibility for another important function of cognitive mapping in organizations. That is, if collective maps partially overlap, they may provide the grounds for revealing the unity and diversity in group decision processes (Fiol and Huff, 1992). The degree to which diversity among a top management team either contributes to improving decision-making or is highly dysfunctional will be investigated, as well as their impact on organisational outcomes. Delineating the various components of cognitive maps related to strategy and their interrelationships, and highlighting similarities and differences, will prompt the research to further investigate decision-making in top teams and the role of these teams in relation to the nature of organizational strategies.

4.2.5.3.2. The Specific Type of Cognitive Maps Used-Influence Diagrams

Diagrams often used in physical sciences, and especially in engineering, are well known for their ability to render interrelationships between specific variables more comprehensible. A wide range of representations, where in the one end stands the graph (where only two variables are involved), and in the other the network (where relations among several variables are identified) offer themselves for choice when a more visible and succinct tool is needed.

Influence diagramming focuses explicitly on influences among elements, and is a qualitative adaptation of systems dynamics modelling, introduced by Forrester (1961), the founder of the industrial engineering discipline, and the signed digraph methodology invented by Roberts (1973). According to Diffenbach (1982), *"Influence diagramming modelling is a qualitative rather than quantitative methodology. One cannot ascertain from the diagram the net results of a network of influences. This because factor level or rates are not specified, influence relationships are not expressed as quantified functions, and time dimensions of influences are not specified. Thus, the technique is only a partial approach, that must be supplemented with other analysis. Its value is that it forces a systematic consideration of the key factors and the*

interrelationships among these factors, in a way that can reveal overlooked considerations, as well as, offer clues to possible counterintuitive consequences. It is amenable to the inclusion of social and political factors that are often difficult otherwise to consider systematically" (p.134).

(i) Basic Components

Figure 4.2 displays an influence diagram. A, B, C, D, E, and F are the factors (concepts) identified.

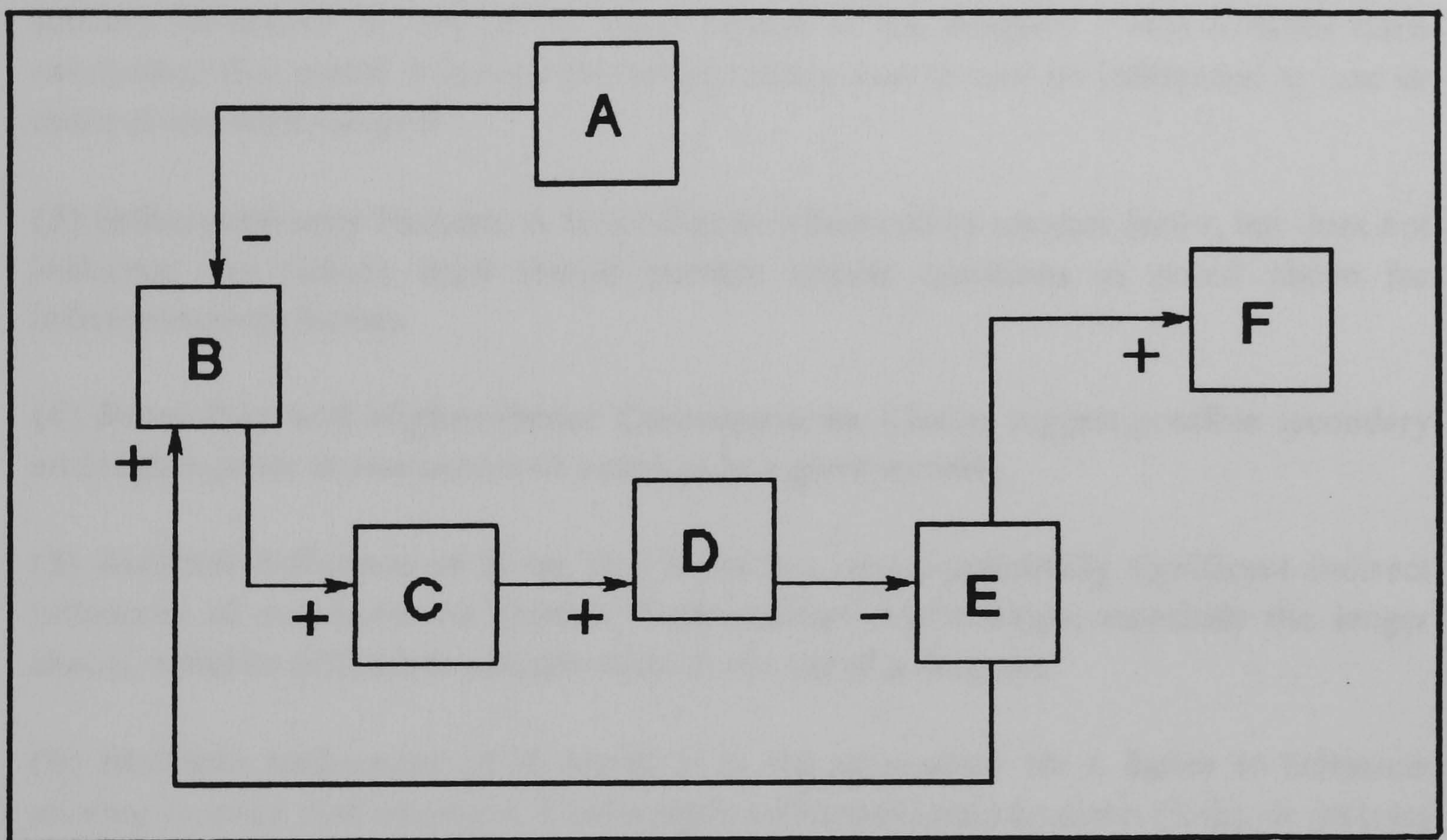


Figure 4.2: An influence diagram

The direction of causality between two concepts is indicated by arrows called links, while a chain is a sequence of links such as A.B.C.D.E.F. A closed chain, that is one that has the same factor as origin and end, is called a loop (e.g. B.C.D.E.B). A more detailed description of the basic components of the influence diagrams is provided in **Appendix C**.

(ii). Interpreting the Influence Relationships

Diffenbach (1982) proposed eight guide-lines along which an interpretation of the influence relationships can commence. These guide-lines were followed in this research and are presented below in a condensed form.

(1) Isolated factors: A factor not linked to any other factor should prompt two questions: Have all important links and factors been identified ? Is the isolated factor truly relevant to the strategic issue represented in the diagram?

(2) Influencing-only Factors: A factor that influences other factors but is not itself subject to influence of other factors, should prompt two questions: Is the factor not actually influenced by one of the other factors in the diagram ? Has a factor been overlooked that would influence the subject factor and in turn be influenced by one or more of the other factors?

(3) Influenced-only Factors: A factor that is influenced by another factor, but does not influence any factors itself should prompt similar questions as noted above for influencing-only factors.

(4) Secondary and Higher-Order Consequences: Chains suggest possible secondary and higher-order consequences of a change in a given variable.

(5) Indirect Influence of A on B: Chains can reveal potentially significant indirect influences of one factor on another. Such indirect relationships, especially the longer chains, could be difficult to identify without the use of a diagram.

(6) Multiple Influences of A on B: It is not uncommon for a factor to influence another in more than one ways. The multiple influences could be direct (link), or indirect (chain). They could be of the same or opposite signs. The latter are often overlooked, in mental conceptualizations of an issue.

(7) Self-Regulated Loops: A negative loop is called self regulating. Successive cycles of influences result in counteracting pressure.

(8) Vicious Cycles: A positive loop behaves as vicious cycle. Because it is unlikely that vicious cycles operate endlessly, unresisted by countervailing forces, one should look for one or more negative loops, that are interrelated with the positive loop by means of a common factor.

(iii). Strengths/Limitations of the Use of Influence Diagrams

As Huff (1989) stated, influence diagrams exhibit internal consistency, predictive power (future decisions follow logically from them), and intercoder reliability (when documentary evidence is used and two coders are assigned the task to classify the concepts). These unchallenged qualities make influence diagrams useful tools for researching strategic management issues.

However, all cognitive maps have certain limitations as stated by Eden et al. (1979). Because of the limitations of human cognitive capacity, one cannot at any particular moment think of all the possible consequences or explanations he believes could flow from a particular event. This is usually explained through the notion of "*mental set*", by which a person's thinking on a particular occasion will follow the lines on which he starts off. Also, the influence diagrams do not cope with the strength of beliefs. When one says that a concept leads to another, the relationship that he is describing is often not meant to be one-over-one causality. Thus, there should be a notion of strength indicating to what extent one event will cause another. Furthermore, Eden et al. (1979) claimed that since individuals tend to impose order on recollected events, these maps may display overly rationality.

As Huff (1989) pointed out, one of the most crucial questions is that of objective validity that looks at the relationship between cognition and cognitive maps. According to her view, the map-maker must be aware that all of the data available on internal cognitive processes are in fact secondary external artifacts, at least one step removed from the phenomenon of interest. She claimed that the issue of whether the strategists' thinking follows certain patterns or is the map-maker that creates them, is yet unresolved. Huff (1989) recommended the presentation of a cognitive map as a depiction of perceptions that may be constructed and analysed without the necessity of judging the objective validity of their content. Moreover, she stressed that cause-mapping has the disadvantage of equating causal reasoning associated with old and new frames of references, because most of the concepts central to strategy are likely to change as the organisation and its environment alter.

The final shortcoming of cause-maps refers to two weaknesses of the type of the causal relationships between elements: (1) they don't reveal levels of certainty, that is there is no way to distinguish among relations taken on faith and relations that have proven themselves over time as a result of feedback of controlled activities, and (2) conditional statement and non-monotonic causation (e.g. "*if A then B*" or "*initiation of the new pay scheme*" caused an "*increase in company's operational deficit*") cannot be distinguished in cause-maps.

Through loops that are one of the basic constituents of the influence diagrams, one can overcome some of the limitations described. By carefully identifying loops, a systems dynamic presentation of the organization is obtained which in turn serves to comprehend organizational complexity and guide directed change (Bougon and Komocar, 1990).

In the next section, the maps representing strategists' cognitive schemes are described which may help distinguish the varying levels of organizational and environmental complexity faced by those seeking to achieve the goals they set for their organization

4.2.5.4. Applied Method

4.2.5.4.1. Characteristics of the Maps Used

The strategists' maps were divided into three sections: (1) The **environmental** section, containing the concepts referring to the company's task environment and macro-environment (in public sector enterprises there is not a clear distinction between these two terms); (2) The **decision-area** section, containing the decisions identified as strategic by the Board-members; and (3) The **organizational** section, comprising all cognitive elements pertaining to the firm's inner environment. The rationale for this structure is analysed in detail in **Chapter 6**.

4.2.5.4.2. The Selected Type of Cognitive Map

Huff (1989) has grouped the mapping methods into five generic categories. Depending upon the purpose of the map there are: (1) Maps that assess attention, association, and importance of concepts; (2) Maps that show dimensions of categories and cognitive taxonomies; (3) Maps that show influence, causality, and system dynamics; (4) Maps that show the argument and conclusion; and (5) Maps that specify schemata, frames, and perceptual codes.

Fiol and Huff (1992) add one more category to this classification. They note that identity maps (which capture the less rational aspects of cognition) form an important category since identity is a key element in linking rational and non-rational aspects of cognitive maps to other outcomes. They believe that, without a grounding in identity, categorization and causality sub-maps are purely mental exercises.

According to this study's purpose, maps that depict **causal reasoning** were chosen. Based on the assumptions about cognition, i.e. that (i) causal associations are the major way in which understanding about the world is organised, and (ii) causality is the primary form of *post hoc* explanation of events, **influence diagrams** (i.e. a type of the

third, according to Huff (1989), generic category) of strategists' reasoning about strategic decisions were constructed.

The outcome of this fourth stage of the project, i.e the construction of the strategists' cognitive maps, is contained in the first part of **Chapter 6** (Analysing data at the individual level) and is supported by the material offered in **Appendix E** (Rationale for Links).

4.2.6. Fifth Stage: Matrix Mapping

4.2.6.1. Purpose

In order to investigate whether the type of the cognitive maps used would convey the same sort of information concerning strategic decisions as a more structured map, a second type of mapping was employed to perform the same task, that is **matrices**. If the same results were to be obtained, then one could assert that cognitive maps can adequately depict the strategists' schematic knowledge. If not, then comparisons could provide valuable insights as to the appropriateness of the methodological tool employed, its strengths, and its limitations, as well as the domain of its application.

Moreover, the priority up to now, was in the analysis of the decision-makers' cognitive maps in context; the use of influence diagrams to study the articulation of elements of these schemes provided such a possibility. However, although the network of relations between concepts has been outlined, nothing has been said about the concepts themselves, except that they were influential factors stemming from the organizational or external environment. For instance, the rate of acquisition of resources, the level of satisfaction with the decision-making system of the organization, were elements contained in the maps. An important point that should be stressed then, is that these concepts are continuous variables that exhibit themselves in degree only (thus the inclusion of rate or level in their definition), whereas links are treated as dichotomies (either exist or not). These links represented the influences among concepts, and were only illustrated, in the maps, by arrows pointing to a specified direction. The magnitude of this linkage-influence was not designated. Hence, it would become difficult to test whether the perceived equivalent influences were seen as such to the same extent (degree) by the decision-makers.

In order to overcome this limitation, the analysis incorporated a quantitative technique which constitutes the fifth stage of the project. It is a technique based on a theory from cognitive social psychology and makes use of matrices which are algebraically manipulated.

4.2.6.2. Theory

4.2.6.2.1. The Purpose of Quantifications

So far, the research design has deployed the qualitative methods to establish and explain the "*strategy*" perceptions of the decision-makers, regarding the implementation of the modernization plan. However, deficiencies (as already argued) could be detected related to the nature of the data. As **Schwenk (1985)** has argued, the framing of questions by the interviewer, the subjects' selective recall of information, especially when ambiguous events are concerned (or perceptual distortions arising from the need for cognitive consistency, that is compatibility of information received to prior beliefs), and the salient events that are most likely to be recalled, all are shortcomings of the use of participants' recollection in the modelling of organizational decision processes.

4.2.6.2.2. Quantifying the Perceived Strength of Influences

The employed technique was based on principles of the congruity theory which was first introduced by Osgood and Tannenbaum (quoted in **Eiser, 1980; p.38**). They were concerned with the specific question of how a person's attitude changes if he is exposed to a message or communication. The variables considered were: (1) The individual's attitude towards the source of the message; (2) The individual's attitude towards the concept evaluated by the source; and (3) The nature of the evaluative assertion about the concept contained in the message.

Both, the source and the concept were defined in terms of a single evaluative scale of approval-disapproval from -3 to +3. The assertion was treated simply as associative (the source approves of the concept) or disassociative (the source disapproves of the concept). In the basic formulation, both source and concept were referred to simply as elements of judgement and are treated as equivalent, as far as evaluations of relations were concerned. Thus, if one wanted to interchange source and concept and apply the same procedures (s)he could observe the reverse phenomenon, although the attitude effects would be probably different.

Researchers have applied this principle in different research problems. **Ramaprasad and Poon (1985)** incorporated it into a five phase construct to mapping influence diagrams for complex business policy and planning problems. **Stubbart and Ramaprasad (1988)** used it to map strategists' cognitive schemes in the steel industry in the United States. **Eden et al. (1979)** used this method in order to explore the decision-makers' ramified consequences of one cognitive element over another.

4.2.6.3. *The Applied Method*

The objective at this stage was to encode most data regarding "*strategic*" decisions, as they had been defined by the decision-makers, in a format suitable for the application of the technique just described. The data, elicited from the interviews, were: (1) Elements representing the strategic decisions; (2) Influential elements from the organizational environment; and (3) Influential elements from the external environment.

A square matrix was created, and all three categories of elements were listed along the *x* and the *y* direction (Figure 4.3). Elements belonging to the strategic decisions category first, organizational elements next, and environmental elements last.

In a following meeting, strategists were presented with this matrix and were asked, to fill in values best representing the strength of the perceived relationships between the elements involved. All the information needed for the completion of this task was provided in a separate leaflet. The author was present when the strategists were accomplishing this task, in order to provide additional explanations, if required.

The employed scale had values ranging from -3 to +3. The seven points on the scale indicated the following, regarding the relationship between two elements A and B: -3: very strongly negative, -2: strongly negative, -1: negative, 0: no relation; +1: positive, +2: strongly positive, and +3: very strongly positive. Negative values implied inverse relationships (increase in A will decrease B), while positive values were assigned to direct relationships (an increase in A will increase B or a decrease in A will decrease B). A null entry in a cell would express that no perceived relation existed between elements.

The algebraic manipulation of these matrices offered answers to questions such as:

- What elements affect strategic decisions directly?
- Which sector they belong to?
- What elements are affected by a strategic decision?
- Which sector they belong to?
- Are strategic decisions directly related to each other?
- Which is the strength of the overall effect in each of the above cases?

		elements concerning											
		strategic decisions				environmental variables				organizational decisions			
elements concerning	strategic decisions												
	environmental variables			The cells in the matrix were filled in and the scores placed indicated the perceived strength of influences among the elements involved.									
	organizational decisions												

Figure 4.3: Quantifying the perceived strength of influences

It was hypothesized that the analysis of these two sources of data at the strategists' micro-level would reveal information about: (1) the way in which actors defined their world and comprehended important issues, and (2) the validity of the methodological tool employed, to illustrate the actors' schematic knowledge.

The outcome of the fifth stage of the project constitutes the second part of **Chapter 6** (Analysis of matrices) and is supported by the material offered in **Appendix F** (Scores from matrices).

4.2.7. Sixth Stage: Explaining Individual Data: Looking for Patterns

4.2.7.1. Purpose

Stages Four and Five dealt with: (i) presenting the strategists' cognitive maps at the individual level; (2) revealing the structure of the causal assertions used to identify strategic decisions; and (3) defining the meaning of strategy, according to each member of the Board.

Purpose of this sixth stage was: (1) To trace patterns across the maps, both the influence diagrams and the maps derived from matrices; and (2) To draw comparisons in order to reveal similarities and/or differences.

4.2.7.2. The Applied Method

In order to describe what strategists thought about strategy, the chains of reasoning depicted in the influence diagrams were used, as well as the cause-effect relationships deriving from the matrices. These two data sources were combined and an attempt was made to go deeper from the stated rationales to the hidden assumptions behind them, to understand why some very important issues to some strategists were ignored by others. This aim was based on all empirical evidence in hand, to reveal the meaning each strategist assigned to the concept of "*strategy*".

Simple rules of interpretation were used, in order to identify: (1) Patterns in the structural configuration of influence diagrams; and (2) The perspective conveyed by the notion "*strategic*", based on the positioning of strategy concepts in the chains of reasoning as well as on the links among them.

Special attention was paid to the types of concepts that constituted the maps, their interrelations, the nature of chains of reasoning (horizontal or vertical) and the number of links included into these chains. Here, the evaluation of the relative importance of strategic decisions was undertaken, and the articulation of strategic decisions in the strategy sector was depicted. According to the literature (Eden et al., 1983; Weick, 1979), the number of factors to which the same concept is related directly or indirectly, either as an influencing or an influenced factor, constitutes a measure of the importance of the concept. Eden et al. (1983) developed a way of measuring the importance of each concept in a cognitive map. In addition to accounting for the total number of concepts, influencing or influenced, directly or indirectly, the average length of all the paths linking one concept to others, in the same cognitive map, is calculated. Thus, the structural

characteristics of the maps are used to further deepen the analysis and to reveal how the decision-makers judged the importance of strategy, while speaking about it.

4.2.7.2.1. Patterns in Structural Configuration of Diagrams

Figure 4.4 illustrates the type of tables that were constructed to reveal patterns in the strategists' individual maps (influence diagrams). The six categories on the left-hand side of the tables referred to the structure of the maps, the number, type and distribution of the cognitive elements involved and the type of their inter-relationships. For each strategist, the issues involved by category were sorted and then presented in the appropriate columns of the right-hand side of the table.

	strategists				
	a	b	c		z
concepts belonging to the environmental sector concept a concept b ... concept z					
concepts belonging to the organizational sector concept a concept b ... concept z					
number of strategic decisions					
strategic decisions in horizontal chains					
strategic decisions in vertical chains					
number of cycles					

Figure 4.4: Revealing patterns in the strategists' maps

(1) The first category included the total number of concepts belonging to the environmental sector and its distribution according to sub-categories emerging from the data. (2) The second category referred to concepts pertaining to organisational issues. These issues were also divided into sub-categories emerging from the data. (3) The third category indicated the total number of strategic decisions. (4) The fourth category denoted the strategic decisions found in horizontal chains, that is chains of concepts cutting across the three sectors illustrated in the maps (environment, organization, strategy). (5) The fifth category referred to the vertical links/chains found in the strategy sector of the influence diagrams. Thus, they involved only strategic decisions. (6) Finally, the sixth category referred to the number of cycles (loops) identified in all sectors of the diagrams.

The eight strategists would either exhibit similarities or differences in patterns concerning structural properties of their influence diagrams. Thus, if they placed the bulk of concepts in the organizational category, then structures and processes were playing the most important role in their point of view; on the other hand, if they exhibited more balanced categories (that is, environment and organization were generating almost the same number of concepts), then the organizational sub-categories tended, in their view, to be of equal importance as the environmental ones.

4.2.7.2.2. The Perspective Revealed in the Influence Diagrams

While the previous test dealt with structural properties of the concepts involved in the influence diagrams, this test was concerned with the perspective each strategist attributed to the identified strategic decision. The aim was to investigate the ways in which actors addressed a rather open-ended management situation that had strategic implications. This would probably result in understanding the way in which actors made sense of ambiguous situations, which, in turn, would probably assist in understanding strategic thought.

Figure 4.5 illustrates the type of tables constructed in this case, to reveal the perspective given to strategy by the decision-makers. For this purpose, the interpretative guide-lines referred to in **Chapter 7** were utilized. At the left side, the tables contained the set of strategic decisions identified as such by each decision-maker: (1) The first column contained a number that defined the average length of causal chains including the strategic decisions under consideration. (2) Thus, strategic decisions extracted from the accounts as positively influencing-only elements (or positively-influencing elements) fell into the second column which contained the decisions perceived as having positive repercussions in the environment. (3) The third column included the strategic decisions seen as ends, that is influenced-only elements in a chain (or chains) of reasoning. These chains of reasoning had either positive or negative influence on the identified end. When

positive influence was depicted, then the chain of reasoning could be assessed as **condition (CD)**, whereas when negative influence was perceived the chain of reasoning could be assessed as a **constraint (CT)**. (4) The fourth column contained the strategic decisions that were seen as **means** (influencing and influenced concepts in chains of reasoning). (5) The fifth column was related to the previous one and contained the strategic decisions seen as means in strategy chains of reasoning, that is chains (or links) that comprised concepts belonging strictly to the strategy sector of the influence diagrams. This would highlight whether achieving one decision was instrumental to achieving another. As **McCrimmon (1988)** has stated, this concept of instrumentality, where the attainment of one goal directly contributes to the attainment of another, is very important in strategic analysis. (6) Finally, the sixth column was showing whether the strategic decisions depicted on the left-hand side of the table were seen as having an impact on organizational performance.

strategist	strategic decision	average length of causal chains	positive repercussions in the environment	decision perceived as "end"	decision perceived as "means"	decision perceived as "ends" or "means" in strategy chain	decision having impact on performance
a	decision a ₁ decision a ₂ ... decision a _z						
b	decision b ₁ decision b ₂ ... decision b _z						
c	decision c ₁ decision c ₂ ... decision c _z						
z	decision z ₁ decision z ₂ ... decision z _z						

Figure 4.5: Revealing perspective in the influence diagrams

4.2.7.2.3. Patterns in Cognitive Maps Derived from Matrices

The matrix used (Figure 4.6) was divided into nine sub-sectors. Four of these sectors were selected to be presented and further analysed at this stage, and were the ones denoting: (1) The impact of strategic decisions on a strategic decision; (2) The impact of environment on strategy; (3) The impact of organization on strategy; and (4) The impact of strategy on environment. The following indices were considered: (i) *Sector Density*, which was the number denoting the percentage of identified relationships over the potential relationships of the sector. (b) *Sector Strength*, which was the number denoting the percentage of strong relationships (2, 3 values) over the overall number of identified relationships of the sector. (c) *Number of cycles*: When the structural matrices (that is, matrices derived from the scores matrices when all cells containing non-zero values take value equal to one (1), indicating that a relationship exists) were squared, the new squared structural matrix contained in its diagonal the number of loops (cycles).

strategist	potential entries (no.)	identified relationships		strong relationships		loops
		no.	% (density)	no.	% (strength)	
a						
b						
c						
z						

Figure 4.6: Patterns deriving from matrices

If the *sector density* of the strategists' matrices did not vary very much, one could say that the strategists attained approximately to almost equal cognitive variety. On the other hand, if the *sector strength* exposed a large diversity, one might assume that the strength of the perceived relationships was based on personal grounds. Finally, the *number of loops* would provide an index of measuring dynamic effects and cognitive strain.

The analysis of the matrices' indices might prove that the strategists' cognitive maps derived from matrices often illustrated a different reality from the one depicted in the influence diagrams. This might be explained by the fact that the strategists, when asked to score on matrices, thought for the first time about some relationships, as pointed out by other researchers who used this technique to map the strategists' cognitive frames (Stubbart and Ramaprasad, 1988).

The outcome of the sixth stage of the project constitutes **Chapter 7** of this thesis.

4.2.8. Seventh Stage: Theory Building

4.2.8.1. Introduction

The case study used two types of data, that is interview accounts and documentary sources against background information from within and the outside of the enterprise. The aim of this final stage was the building of an explanatory theory based on this material. This theory should specify the relationship among a set of variables or concepts identified in the data. **Chapter 3** deals in detail with analytic induction (a method of analysis used to make inferences), which aims at identifying categories, and finally relationships between them. Analytic induction expresses a holistic approach to data evaluation. Rather than looking for simple statements or for linear relations of isolated variables pulled out of their context, it stresses the importance of the context by drawing on it, every time a new case is examined.

4.2.8.2. The Applied Method

Having acquired the analytic categories (strategic decision-areas), the patterns associated with them and the strategists' rationales that concern them, the analysis proceeded to the final stage that of integrating all these elements into a theoretical scheme. A typology was created to account for both patterns in organisational actions and for the role of Board-members in the strategic decision-areas studied. The means by which links between the concepts were found and new concepts were identified and included in the analysis was based on a systematic comparison between slices of data. First, categories were established and each slice of data was examined and its relevance to one or more categories was noted. Then, it was compared with other slices of data that

fell into the same category. In this way the variation and range of any given category could be mapped in the data, and such patterns could be explored in relation to other categories. Thus, the mutual relationships and internal structures of categories would be established and identified.

When "*deviant*" cases were encountered (that is cases that lacked features in common with other cases of the same category) then there were two alternatives; either to alter the list of common features so as to accommodate the "deviant" case, or to modify the scheme for classifying cases.

The outcome of the seventh stage of the project is contained in **Chapter 8** of this thesis. **Appendix G** (Drawing Composite Maps) informed the final stage of the research.

4.3. METHODOLOGICAL IMPLICATIONS

The advantages and disadvantages of each instrument are discussed in this section and the degree to which they helped to advance the research purpose is highlighted.

4.3.1. Decisions Categories (Decision-Areas) - Frequencies

The categories in terms of which archival evidence was organized referred to the Board's overall activities. **Hickson et al. (1986)** noted that this activity has been screened from outsiders and there has been no systematic knowledge about top decisions, since the few strategic decisions examined in the literature -before the publication of their research- were "*here and there with no connection between them*" (p.28). Yet, their research centred on the study of 150 top decisions of various organizations while in this study a Board's overall activity was the main focus of the first phase of the research.

The identification of categories was an important element in the process of analysis since categories were the links between the two stages of the research, that is the archival evidence collection phase and the interview phase. Thus, much attention and time were devoted to it. The list of categories could not undergo major changes in later stages since subsequent stages of the research were to be based upon them. Since the categorization was based only on the topic of the decision (and not on decisions' implications nor on difficulties of their implementation), few ambiguities were encountered when classifying them and this is something that other researchers have pointed out (**Hickson et al., 1986**).

As said in the previous section, the universe of decisions concerning the Board's activity was analysed and illustrated graphically. Thus, decisional activity over time functioned as the historical context for each decision-area. When explanations supporting the propositions generated were provided in the final stage of the study, these have taken into consideration the identified pattern. Embedding strategists' rationales in an historical perspective helped to validate them and to strengthen, consequently, the line of interpretation.

4.3.2. On Cognitive Maps

Cognitive maps helped to extract from the body of the interview material that was relevant to the research questions and to present it in a systematic manner which also facilitated further analysis. Yet, subtlety and informational asides were lost by considering only statements leading to strategic decisions. However, this is something that all research tools, used to categorize data from qualitative research, cannot avoid losing. In exchange, the coding created a capacity to look into the evidence in a quick way and allowed for comparisons to be made across individual maps of decision-makers, based on the same decision-areas. Also, maps revealed gaps in information or reasoning. In this research, these gaps generated questions about whether the strategic decision included into the reasoning adequately accounted for a decision outcome (Fiol and Huff, 1992).

The structure of the influence diagrams helped to organise concepts around major sectors. The environment appeared as an overwhelming concept, causing uncertainties and resulting in negative implications for the firm. In those cases, the strategic decisions took on a negative significance, that is they were thought of and denoted as negative (the environmental impact was so strong that the firm had to comply with it, though what was done was below expectations). Cognitive maps depicted an over-presentation of the negatives and an under-representation of the positives, on the part of some strategists. This finding took on an important meaning since it provided a hint about involvement and commitment of strategists in performing a strategic role.

Hickson et al. (1986) noted that decisions that would be more strategic than others must be *"the more novel, the more consequential and the more precedent setting"* (p.35). In that case, causal maps are the appropriate tool since they depict linkages concerning implications of and inter-relationships between strategic decisions. Yet, the produced cognitive maps illustrated few of these structures and this was -as explained in the final chapter- due to the way in which the strategists perceived their role.

The understanding of cause and effect relationships of strategic decisions as well as of the inter-relationships of strategic decisions themselves proved difficult at the individual

level. Such difficulties were overcome when chains of reasoning referring to a certain strategic decision (extracted from the strategists' cognitive maps), were aggregated and analysed in context (how each one interrelated and interacted with the others).

Concluding, it can be said that, so far, empirical evidence on the use of causal maps was mostly based on documents on public speeches (**Fahey and Naryanan 1989; Ramaprasad and Poon 1988**), and the main interest was rather on strategy formulation than strategy implementation. This study looked at causal maps from an implementation perspective and, furthermore, it produced maps that contained concepts derived through interviews and not through documents that might address a different public. Additionally, because cause-effect relationships of strategic decisions were studied and mapped out at an individual level, looking at their similarities and accounting for their differences (the latter signalling important messages) might shed light to the role of the Board, since Boards are not necessarily consensual entities.

On the disadvantages side lay the great complexity derived from the bulk of statements found throughout the interview and which were related to the specific strategic decision-area. The key-problem was the efficacious reduction of data. Also, the identification of nodes some times proved difficult, especially when static concepts such as organizational structure were involved, and when some types of causal relationships (conditional, non monotonic causation) that strategists sometimes used in their interviews, could not be included into the maps and thus they had to be taken off. However, it should be stressed here that these hypothetical relationships that strategists used to raise in relation to strategic decisions, alerted the author to investigating in subsequent instances what was the real role the strategist played on the Board, by asking him questions mantled in the identified hypothesis.

4.3.3. The Interpretation Stage

4.3.3.1. On the Validity of the Propositions

In the final stage of the research, which is presented in the final chapter where the author aggregated the two different data sets -that is the decisions' patterns and the explanations provided by the strategists about strategy-, she tried not to cast a simple and linear logic on what proved to be complex, often non-rational, and many times multi-faceted. The differences in rationales revealed that different actors invoked different reasons for the same phenomenon as **Bogdan and Taylor (1979)** have pointed out; therefore, there was not a single logic to follow. Instead, the different slices of information about the same decision-area were juxtaposed, compared and then synthesized to form the hypotheses explaining strategy-formation processes in this setting and the role of the Board in shaping them.

In moving between data and concepts, the author took great care to note plausible alternative links to those made in the emerging theory. Also, concerning the propositions generated, she made explicit all the assumptions to which strong challenges might be made (**Bogdan and Taylor, 1975**).

Moreover, the presentation of findings in the analysis/interpretation stage, in the last chapter, with sufficient detail, aimed at displaying how the different methodological tools were integrated and how theory was generated. Thus, the reader too may participate in the process of validating the theory, by weighing the influence.

Finally, a theory cannot be proved valid for ever. As **Hammersley and Atkinson (1983; p.20)** pointed out, there is always the possibility that new facts may appear in the future that will disprove it.

4.3.3.2. On the Representativeness of Findings

One of the limitations often noted in connection with the design of a research as a single case study, is that this constantly threatens its representativeness.

Yet, qualitative research studies certain general social processes in any single setting or through any single subject. The main aim is to understand how these processes occur and which are the circumstances that shaped them. Some processes that appear in bold relief under such circumstances appear only faintly under others. Therefore, some aspects of life can be best studied in each setting or through each subject because there it is best illuminated.

These circumstances -or, in another terminology, the context- were given considerable attention and they were taken into account when displaying how the theoretical propositions were generated

The study of a single case appears as threatening the representativeness of the findings and it is true that the more cases studied in which similar results are obtained the more confident we are about our conclusions, though statistical sampling techniques do not resolve the issue. As argued extensively in **Chapter 3**, in terms of the research purpose, a selection of a critical case may be more fruitful instead of the study of randomly selected sample of cases.

The present study aimed at understanding strategy formation, in the implementation period of a Strategic Plan in a public organization. It explored the nature and processes of strategic decisions (the emphasis on processes) taken by the managing Board

(emphasis on the people acting as strategists) and looked specifically into how the strategists' perceptions (emphasis on the cause-effect relationships) about strategy influenced the processes identified.

Concluding, the author cites what other researchers have noted, in terms of this duality between wide representativeness and in-depth study. In their view, there are always limitations in methodologies and no theory can *"at the same time be generalizable, accurate and simple. Scientific inquiry is an ongoing process and is seldom completed with a single research effort"* (Fredrickson, 1983; p.572).

4.4. SYNOPSIS

In this chapter, a description has been offered of the methodological stages of the project. Each stage will be taken on, in detail, in subsequent chapters.

Cognitive mapping will constitute the technique to illustrate the concepts used by strategists in their rationalizations of strategy. These concepts were defined by strategists themselves. Yet, mapping might reveal differences among strategists either in terms of concepts identified or links among them. To validate the employed technique, more structured maps will be built, based on the same concepts, and strategists' links among them as well as the perceived strength of the relationships would again be identified, but now on a common basis. Outcomes from both techniques will be compared and differences will be commended. Inquiring the same phenomenon using two different tools poses an additional interest since it appears for the first time and provides ideas as to the suitability of the technique used or the nature of the phenomenon itself (strategy-strategists).

Furthermore, though patterns of causal reasoning have been used in several streams of organizational research in planning, its nature had a prescriptive orientation, aiming at improving managers' thinking, or was concerned with one decision or a unique organizational area . Patterns of causal reasoning concerning a group of interacting people were never studied, nor their effects on the change process were examined. Thus, the employed methodology expands on the appropriateness of cognitive mapping in a new domain of application.

Comparisons will be drawn in the final phase (between the different slices of data) during which biases of particular people and methods tend to accommodate themselves as the underlying causes of variation are discovered. Hypotheses will be generated that would incorporated categories and their properties supported by the data all accounting

for aspects of the phenomenon under study, that is how strategies are formed in a public enterprise.

CHAPTER 5

IMPLEMENTING THE STRATEGIC PLAN

5.1. INTRODUCTION

The purpose of this chapter is to analyze and categorize the documentary evidence concerning decisions made by the under-study Board over the period of the plan's implementation. The outcome of this process is concerned with: (1) the classification of decisions across different categories, termed decision-areas; and (2) the detection of patterns illustrating frequencies across the identified decision-areas.

In terms of the research objectives, as described in **Chapter 1**, this chapter aims at tracing the Board's decision outcomes in major organizational areas and illustrating their patterns within the context of the Strategic Plan. Using and analysing historical data, this chapter will focus on "*pertinent, reliable and verifiable facts*" (Lastrucci, 1963) that will provide one of the two major sources of data to be used in this study. Moreover, when the testimony of the decision-makers who have observed events from different points of view will come into the stage, the research will subject the evidence to further analysis, in order to answer the stated research questions.

5.2. ANALYSING INFORMATION ON THE BOARD'S DECISIONS

This chapter deals with the decisions made by the Managing Board of the Enterprise over the period 1980-1988. The intention is to depict the actions of the organization through the decisions made, and then to look at consistencies or not that these actions may display. The section concludes with a first attempt to understand how and why the identified patterns developed and changed.

The employed methodology has been described in **Chapter 4**. In summary, the Board's minutes over the period 1980-1988 were examined and the decisions made during each meeting were recorded and classified. Thus, a list of 98 decision-areas was constructed and is displayed in **Figure D1 (Appendix D)**. The same figure illustrates the aggregation of the 98 identified decision-areas into 49 broader decision-categories. A table of the numbers of each type of decisions made for each category over the period examined was constructed and is displayed in **Figure D2 (Appendix D)** in the form of annual distributions. The same figure also displays the relevant percentages. On the basis of this information, histograms for each of the 49 decision-categories were drawn, 18 of which, i.e. those mostly mentioned by the strategists during the interviews which followed (**Chapter 7**) are displayed in **Figures D3-D20 (Appendix D)**.

5.2.1. Decisions on Acquisition of Equipment and Infrastructure

The functions of construction and maintenance of way and structures are generally referred to as engineering. Their purpose is to provide the facilities on which the railway operates as a supply or service activity. This includes construction of new lines, ongoing maintenance, and improvements of the physical plant of the railway. The amount spent in any particular year for these functions depends on the stage of development the railway is in, the extent to which previous investment in improvements or preventative maintenance have been made and the extent to which deferred maintenance is practiced.

Moreover, within the engineering function, Board's decisions concern the approval of a long-term plan and design work, the setting of specifications, the tender approval, the resolution of disputes between the sub-contractors and the engineering departments, and the approval of substantial (over 50%) deviations from the budgeted costs of projects.

Figure D12 (Appendix D) shows the distribution of Board's decisions concerning engineering projects over the examined period. In general, an almost stable pattern is evident, except for the 1985-1986 period where a reduction in issues related to constructions may be assessed and related to the initiation of the Government's strict financial policy (Summer 1985). This pattern is depicted as strategy in **Figure 5.1**.

The other half of the supply side of the railway activities is equipment, that is locomotives and cars (or multiple units). As demonstrated in **Appendix A (Organizational Background)**, the enterprise faces a serious problem regarding the high percentage of its equipment in "*bad-order*" condition. The causes of this problem (multiplicity of types of locomotives, poor planning of the rolling stock sub-system, inadequate organization, etc.) have been discussed by **Paradissopoulos (1990)**, through a comparison with other European railways.

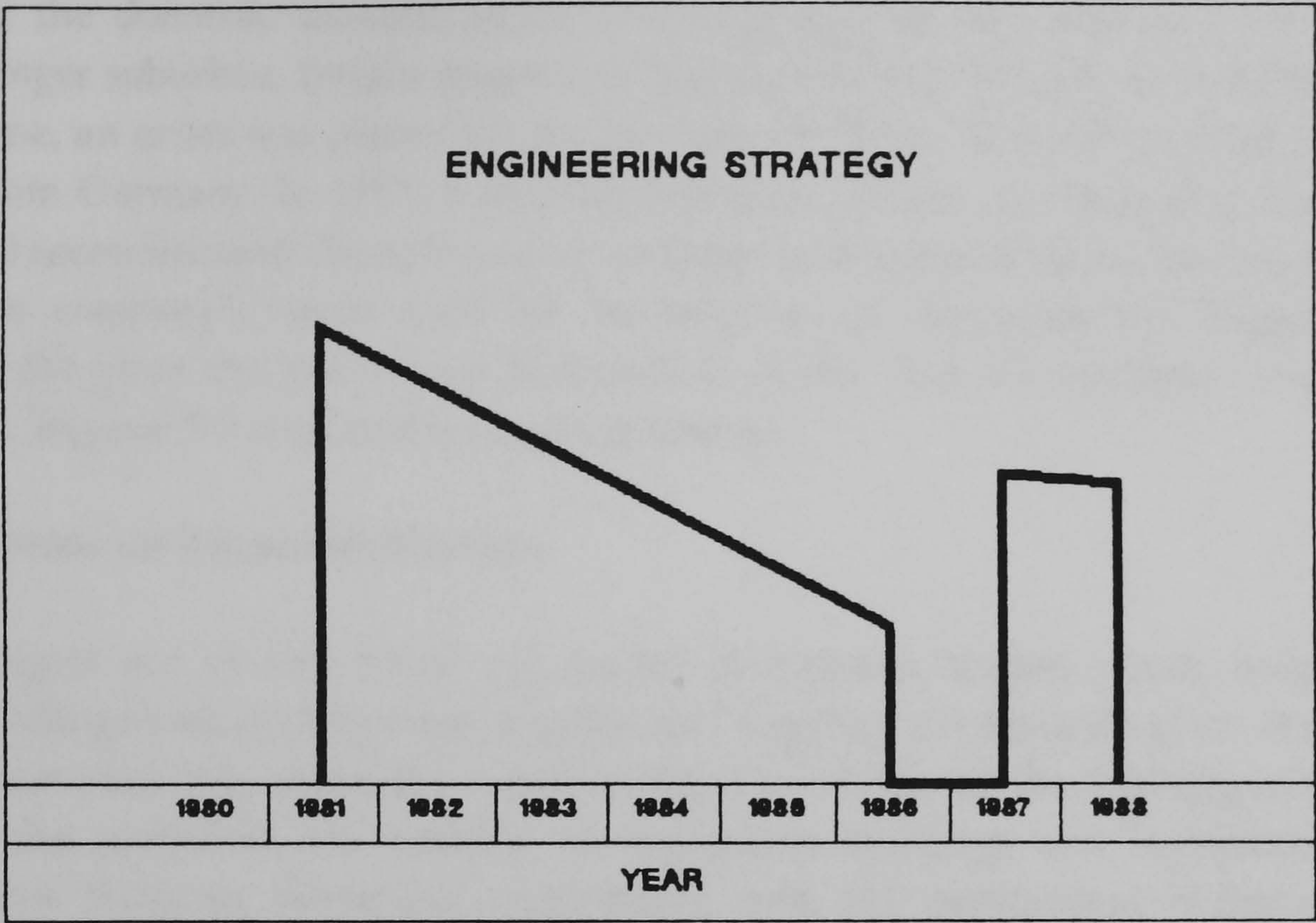


Figure 5.1: Engineering Strategy

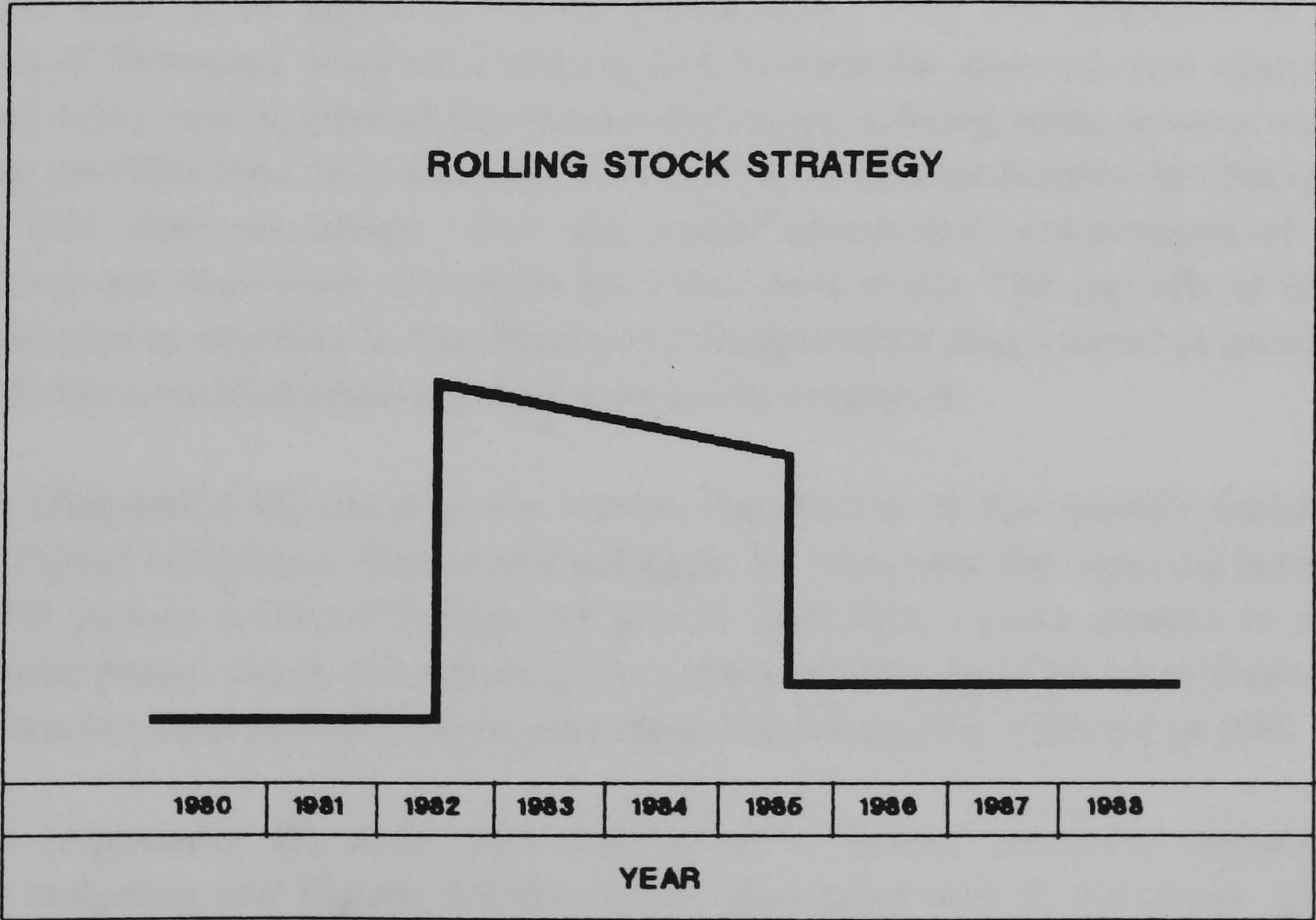


Figure 5.2: Rolling Stock Strategy

In 1983, a major change in rolling stock acquisition policies was initiated and implied a program for the domestic manufacturing of a large part of the company's new rolling stock (passenger suburban, freight wagons) in association with foreign manufacturers. At the same time, an order was placed for the purchase of 12 sets of modern diesel intercity train-sets from Germany. In 1985, a decision was made for the purchase of a number of second-hand reconditioned diesel locomotives from the German Federal Railway (1985), to cover the company's needs until the introduction of electrification. **Figure D16 (Appendix D)** plots the percentage distribution of the Board's decisions concerning rolling stock. **Figure 5.2** depicts the resulting strategy.

5.2.2. Decisions on Financial Matters

Railway budgets are of two kinds: (1) capital investment budgets which include the renewal of rolling stock (locomotives, coaches and wagons), the electrification of existing routes, the purchase of land and the construction of new lines (or the doubling of existing ones), and the provision and renewal of operations buildings and installations and administrative facilities (including computers); and (2) operational budgets which correspond to the means that have to be made available in order to carry on day-to-day operations, that is train and terminal operations, equipment and installations routine maintenance (wages, fuel, spare parts, materials, etc.).

Both budgets have to be approved by the Board before they are submitted to the Departments of Transport, National Economy and Finance for governmental approval. Usually, each July a modification of the operational budget is being made; in some cases, one or more modifications have followed. It should be noted that because the National Investment Plan does not always cover the capital investment requirements of the company, loans are negotiated to provide for these extra needs. The pay-offs of these loans are included as expenses in the Operational Budget while the payment of interests is included in the annual investment programme of the enterprise.

Figure D6 (Appendix D) presents the annual distribution of the Board's decisions concerning capital investment. The resulting **Figure 5.3** illustrates the depicted pattern; while a stable pattern is traced through the period 1980-1985, a peak appears in 1986 which gradually phases out in the following year; this peak may again be associated with the restrictions imposed by the Government's strict financial policy, initiated in 1985.

Figure D5 (Appendix D) shows the distribution of annual decisions concerning operational budgeting and **Figure 5.4** the pattern associated with it. An almost stable pattern may be traced over the examined period.

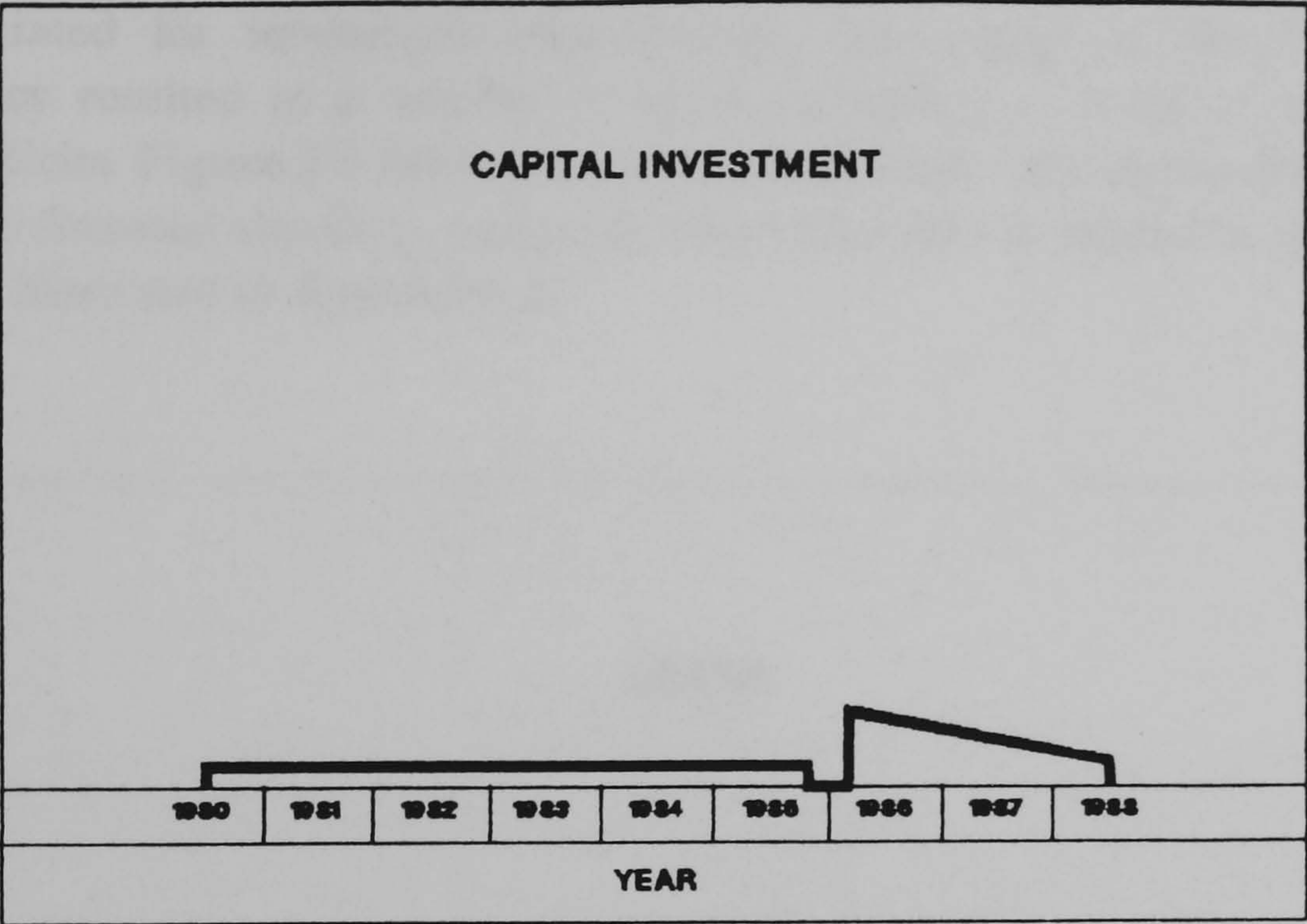


Figure 5.3: Financial Strategy: Capital Investment

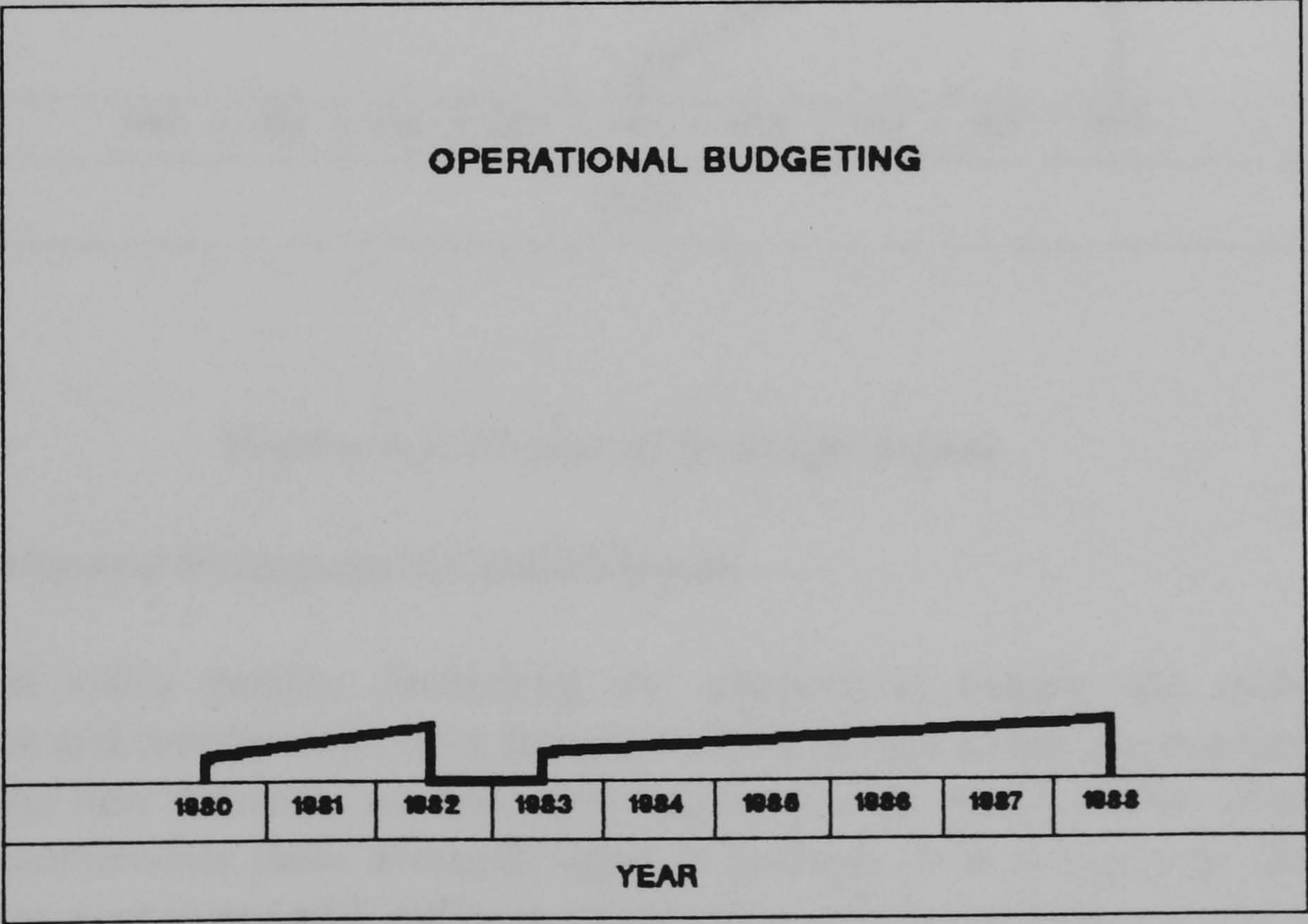


Figure 5.4: Financial Strategy: Operational Budgeting

In parallel with the two other figures of this section, **Figure D8 (Appendix D)** presents the distribution of the Board’s decisions related to loans. While until 1985 loans were mainly negotiated for investment requirements, the change of the Government’s financial policy resulted in a number of loans contracted in order to cover as well operations deficits. **Figure 5.5** depicts the loans curve which mirrors the deterioration of the company’s financial situation, especially when the latter is related to the company’s performance, illustrated in **Appendix A**.

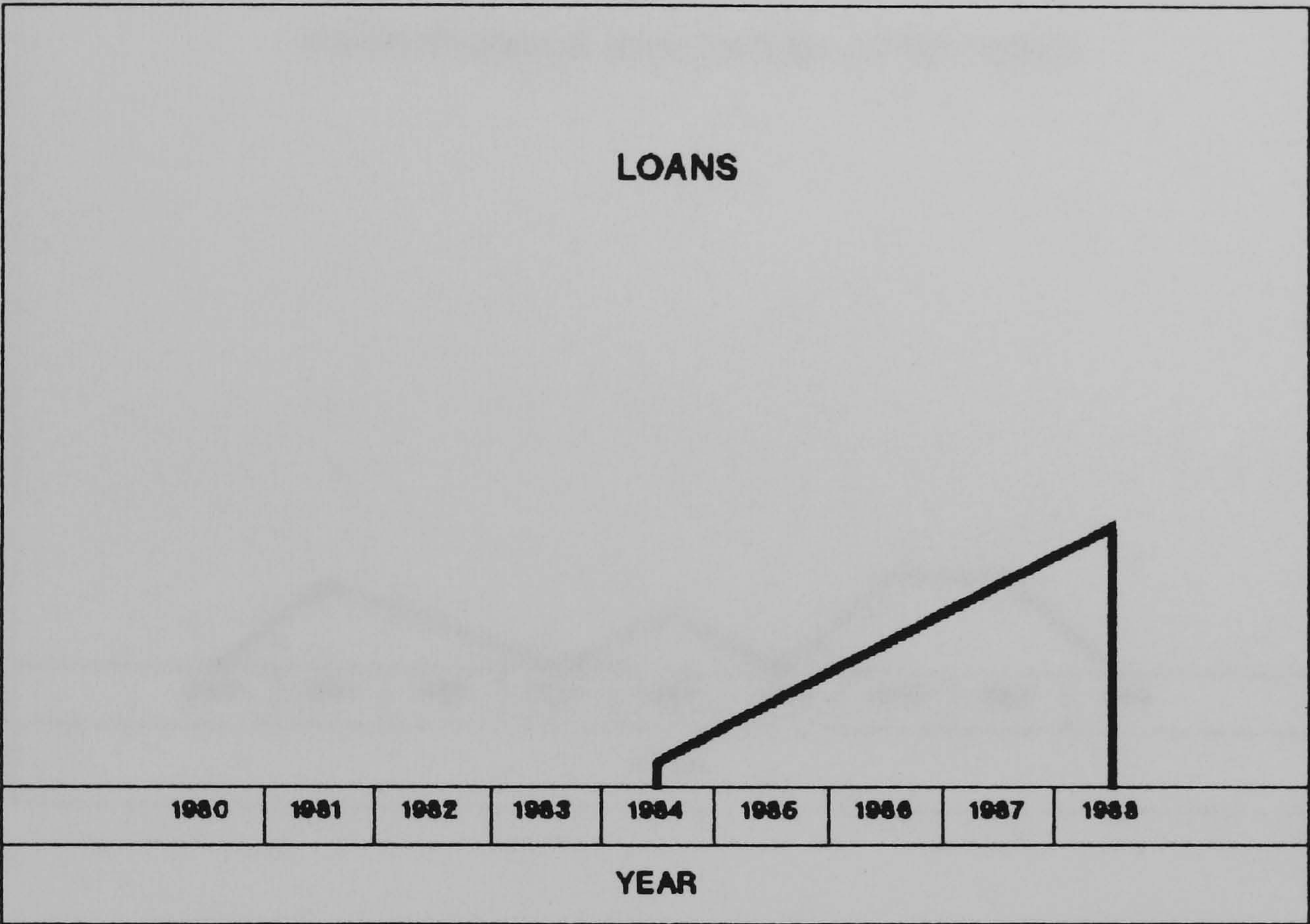


Figure 5.5: Financial Strategy: Loans

5.2.3. Decisions on Management Control Issues

A peak and valley pattern illustrating the attempts to resolve the problem of specialization and coordination, since the undertaking of such a task (the modernization plan) imposed new demands, seemed to be declining until the year 1983, when again efforts to accommodate these demands began to multiply (it is at that time that long-term contracts were signed with rolling stock suppliers and new organizational units, with the task of supervision of these contracts, were created). This evolving pattern reached a peak in 1986, when new members of the Board were appointed, a top sub-committee was created, and a new organizational structure was designed, but, as already stated, was

never implemented. As the plan was progressing and new activities arose, details of job descriptions were worked out (**Figure D , Appendix D**). Also, proliferating rules concerning the various occupational classes within the railways were formed, as a result of the changing work conditions. At the end of 1988, a new organisational structure was designed by the new General Manager and was finally implemented at the beginning of the following year.

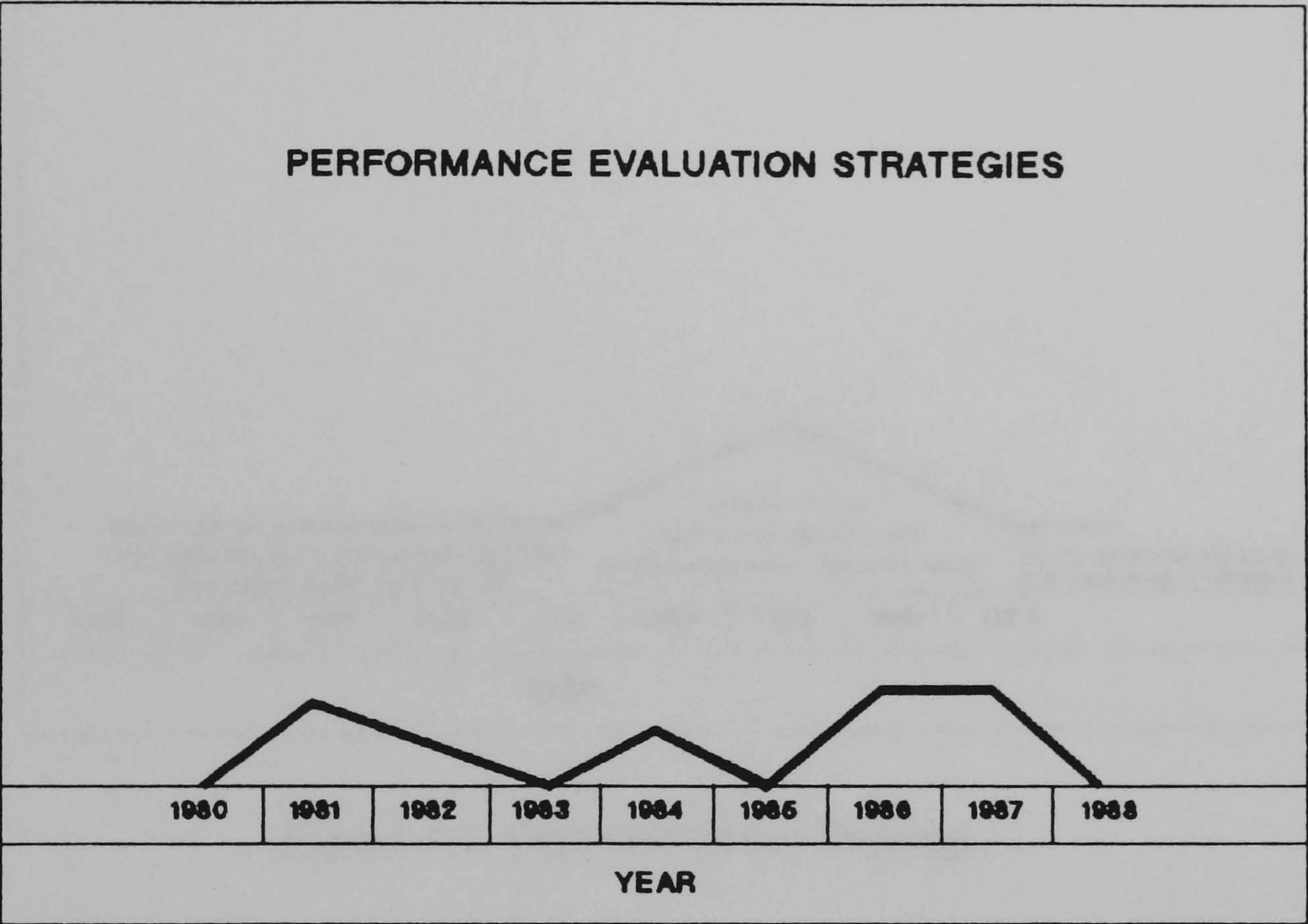


Figure 5.6: Performance Evaluation Strategies

Figure D13 (Appendix D) illustrates this increased Board’s dealing with organizational issues over the period 1984-1987, whereas **Figure 5.6** depicts the resulting strategy. However, the structure introduced, instead of granting independence and autonomy to the local operating and commercial units, resulted in a greater centralization.

Figure D14 (Appendix D) illustrates the distribution of Board’s decisions concerning performance monitoring which in the company, at Board’s level, is of the following three types: (1) budgets’ development monitoring, (2) construction/acquisition projects progress monitoring, and (3) discussion on periodical statistical information presented to the members by the General Manager. According to the Law governing the Board’s functioning, every trimester, or earlier if judged necessary, the Board is informed by the General Manager about the above described areas of interest. though this may appear as routine-based activity -however important it is- the cyclical appearance of strategies in

this area (**Figure 5.7**) reflects the fact that, at times, decisions/actions showed a definite propensity to converge, that is to exhibit patterning. Yet, this periodic convergence tended rather to stabilize itself into reiterating cycles.

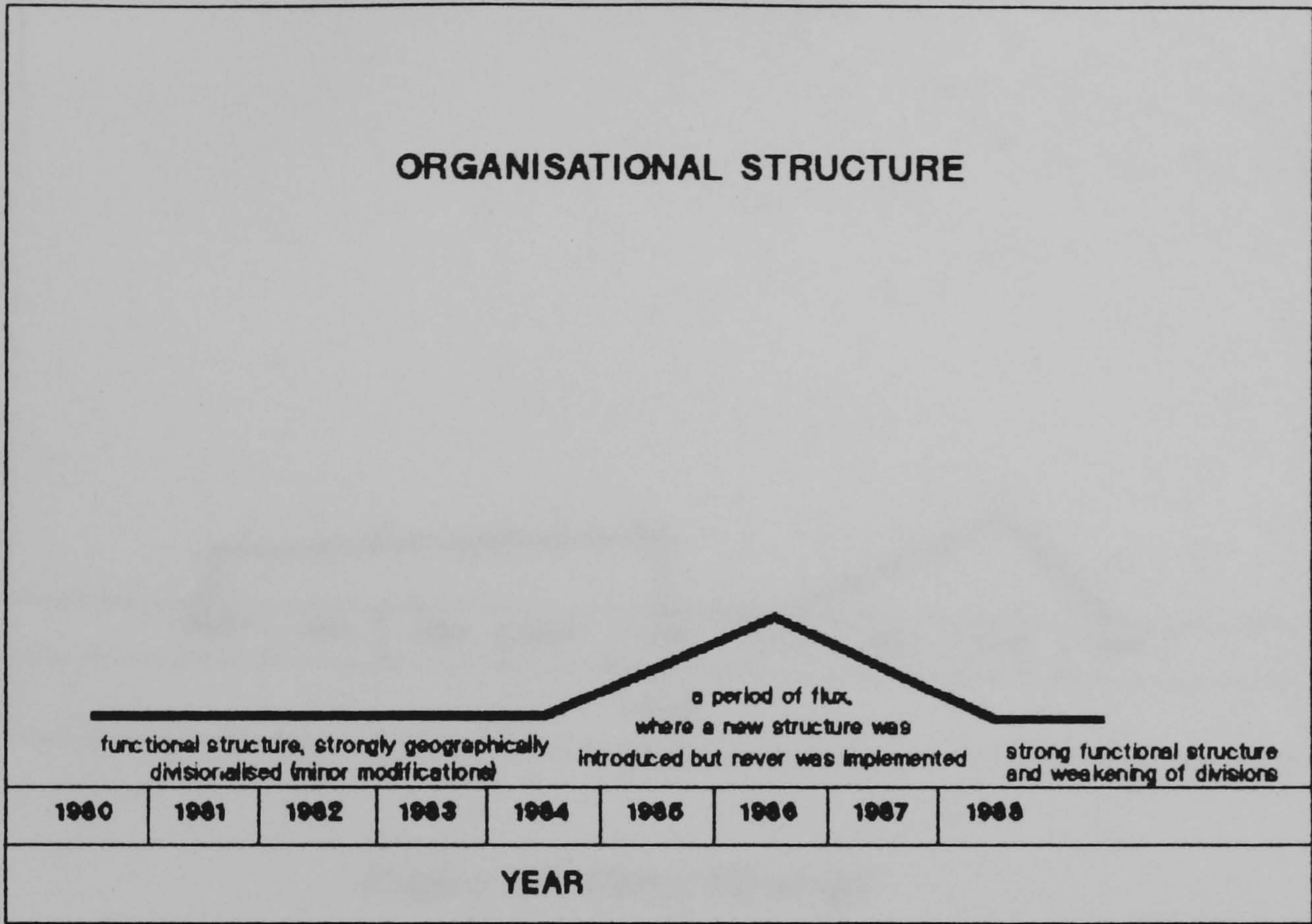


Figure 5.7: Organisational Strategy

5.2.4. Decisions on Commercial Activities

Commercial activities incorporate selling, pricing, customer services, market development and entry into specific markets (specific shippers or industries). The passengers fare structure in a public enterprise is regulated by the State. This includes a process in which the enterprise proposes according to cost elements a fare structure to the higher authority (Departments of Transport and Commerce) and afterwards it ratifies the increases in the fares set by them. While this may be understood as a routine process displaying stable patterns, in the case examined the pattern displays a peak in two consecutive years (1986 and 1987) as may be seen by **Figure D15 (Appendix D)** and the resulting strategy pattern (**Figure 5.8**). The reason of this peak may be attributed to the intervention of the newly established supervisory body (ASKE) which according to the law was responsible for the approval of the fare structure proposed by the company.

Figure D17 (Appendix D) shows the percentage of annual Board's decisions concerning the construction of new sidings to industries.

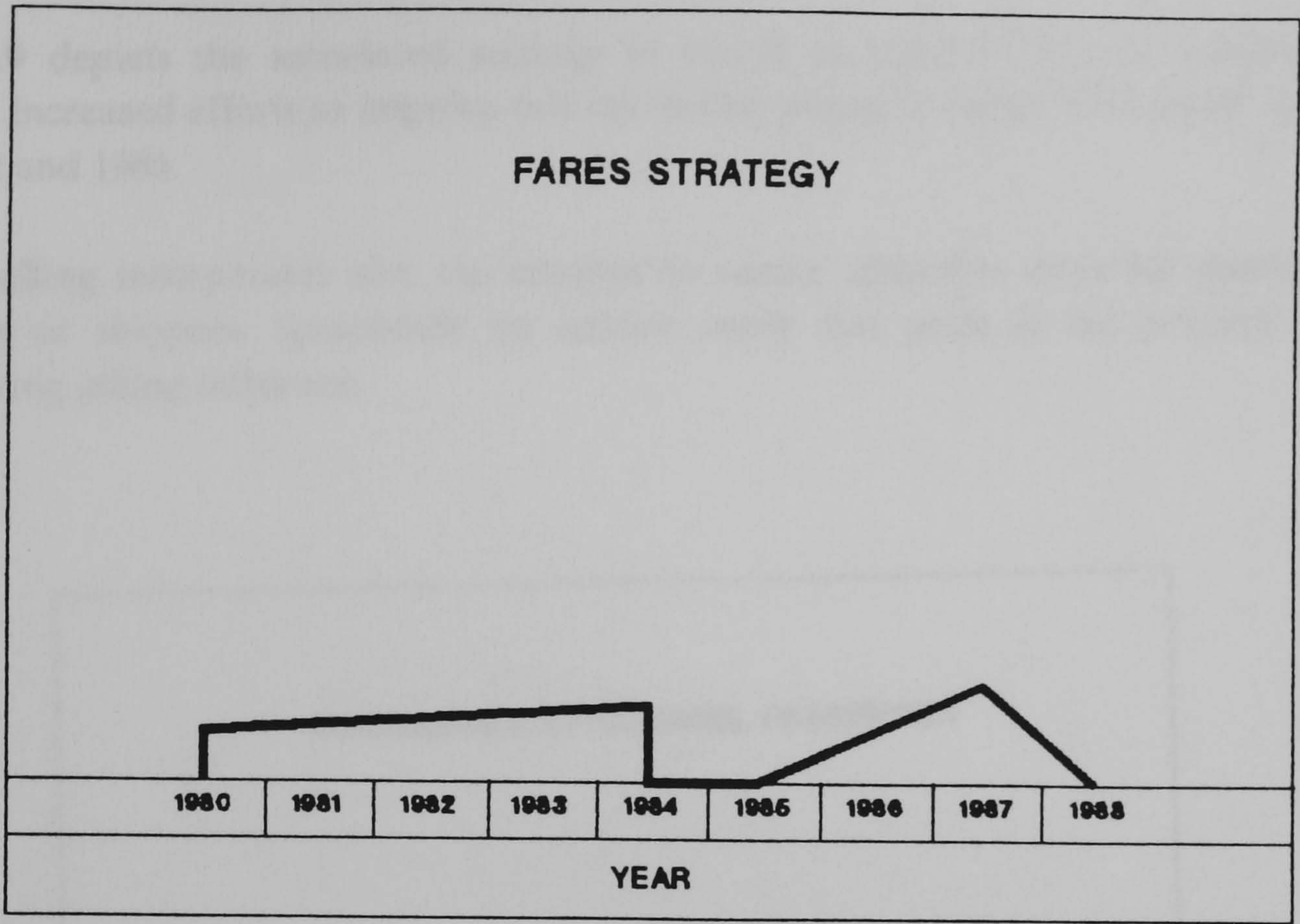


Figure 5.8: Fares Strategy

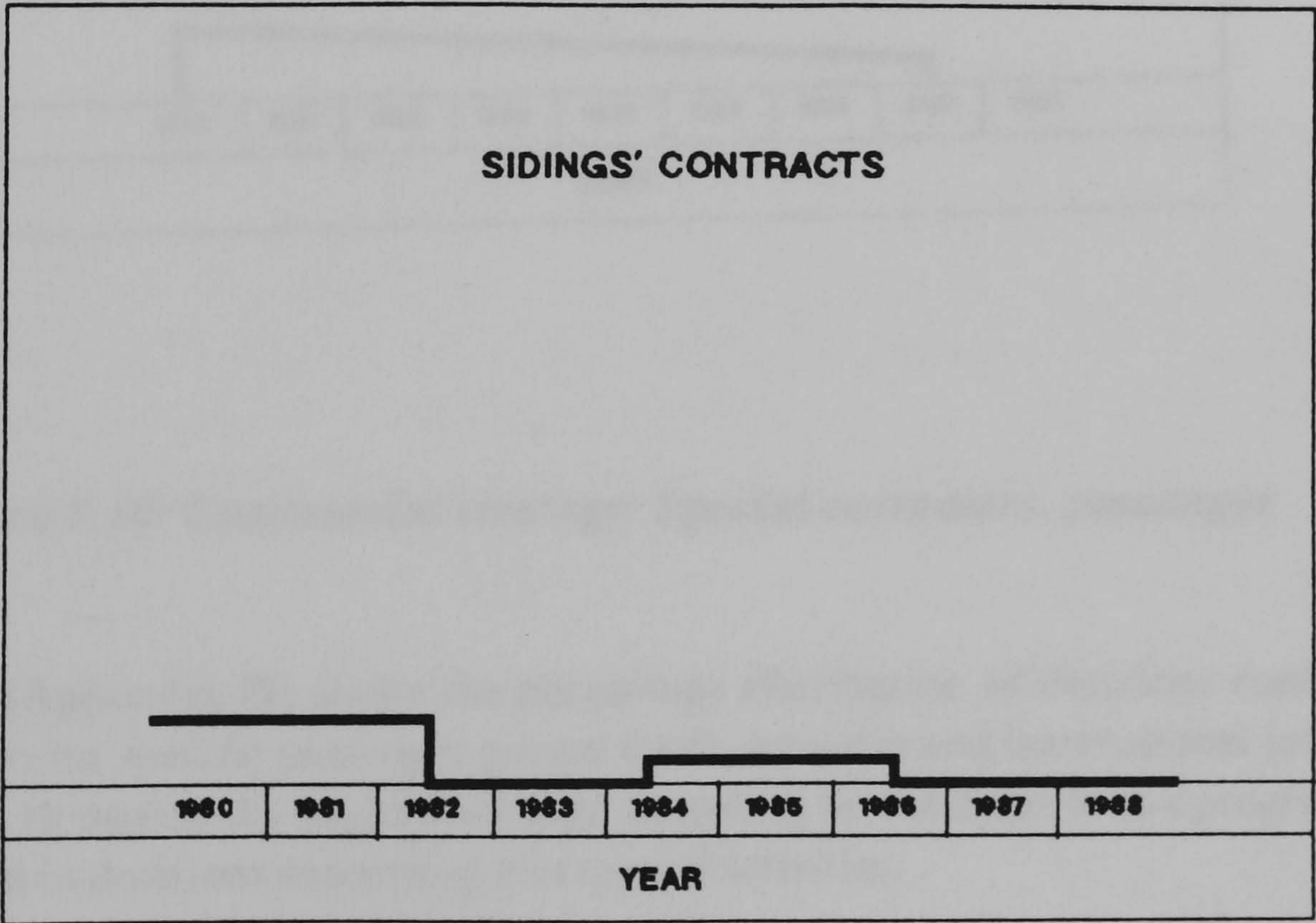


Figure 5.9: Commercial strategy: Sidings

Figure 5.9 depicts the associated strategy in which no pattern may be evidenced. Relatively increased efforts to improve this marketing and sales policy were made in the years 1982 and 1986.

Railway selling incorporates also the attempt to secure attractive rates for classes of passengers or shippers. Specifically its actions imply that price is the primary and overpowering selling influence.

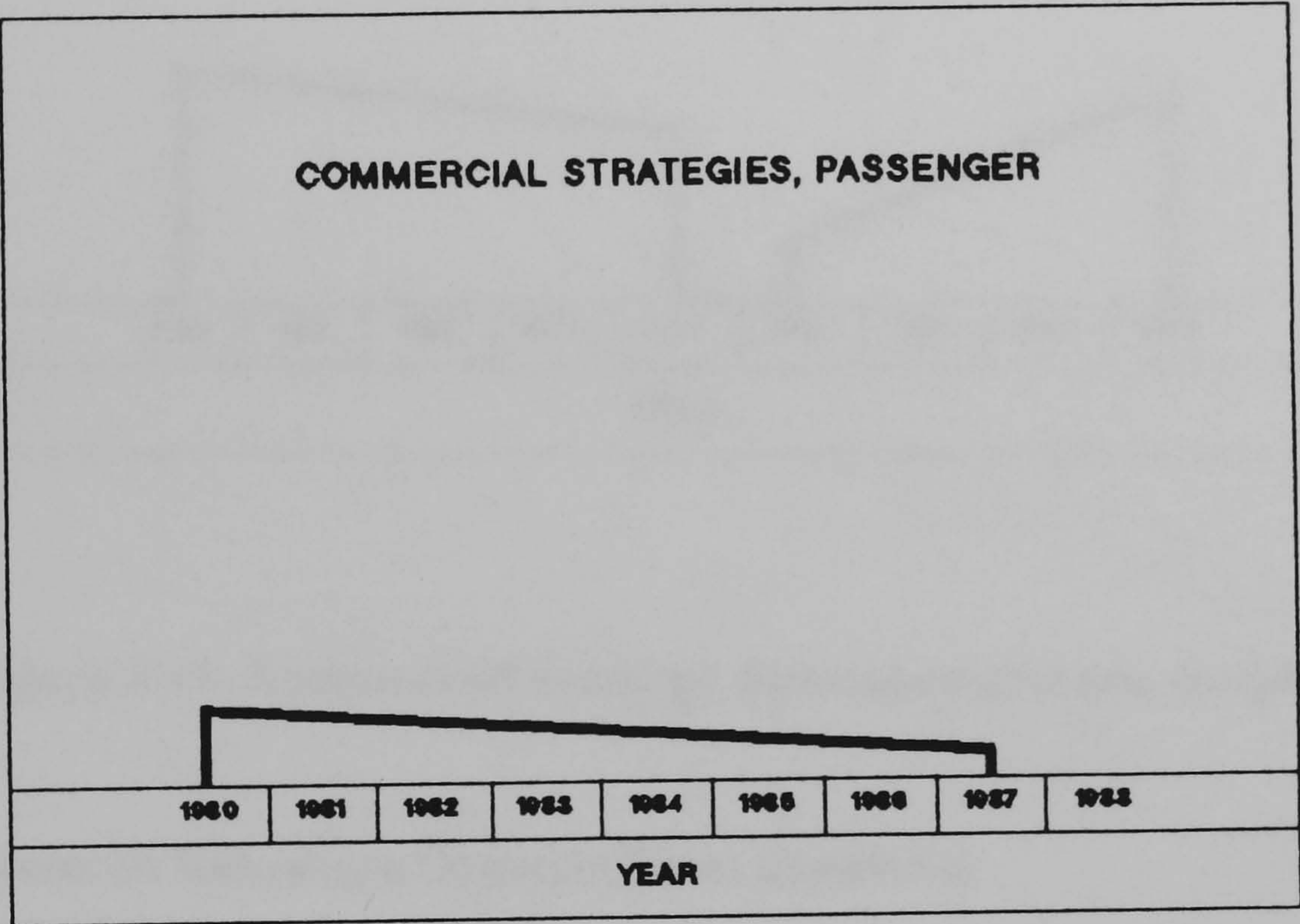


Figure 5.10: Commercial strategy: Special customers, passenger

Figure D19 (Appendix D) shows the percentage distribution of decisions concerning fare reductions for specific passenger groups (both domestic and international journeys) and **Figure 5.10** depicts the implied strategy, according to which the Board progressively is less engaged in decisions concerning this type of activities.

Finally, **Figure D20 (Appendix D)** shows the percentage distribution of decisions concerning fares for major shipper of freight traffic (both domestic and international trips). The more important cycles are depicted as strategies in **Figure 5.11**.

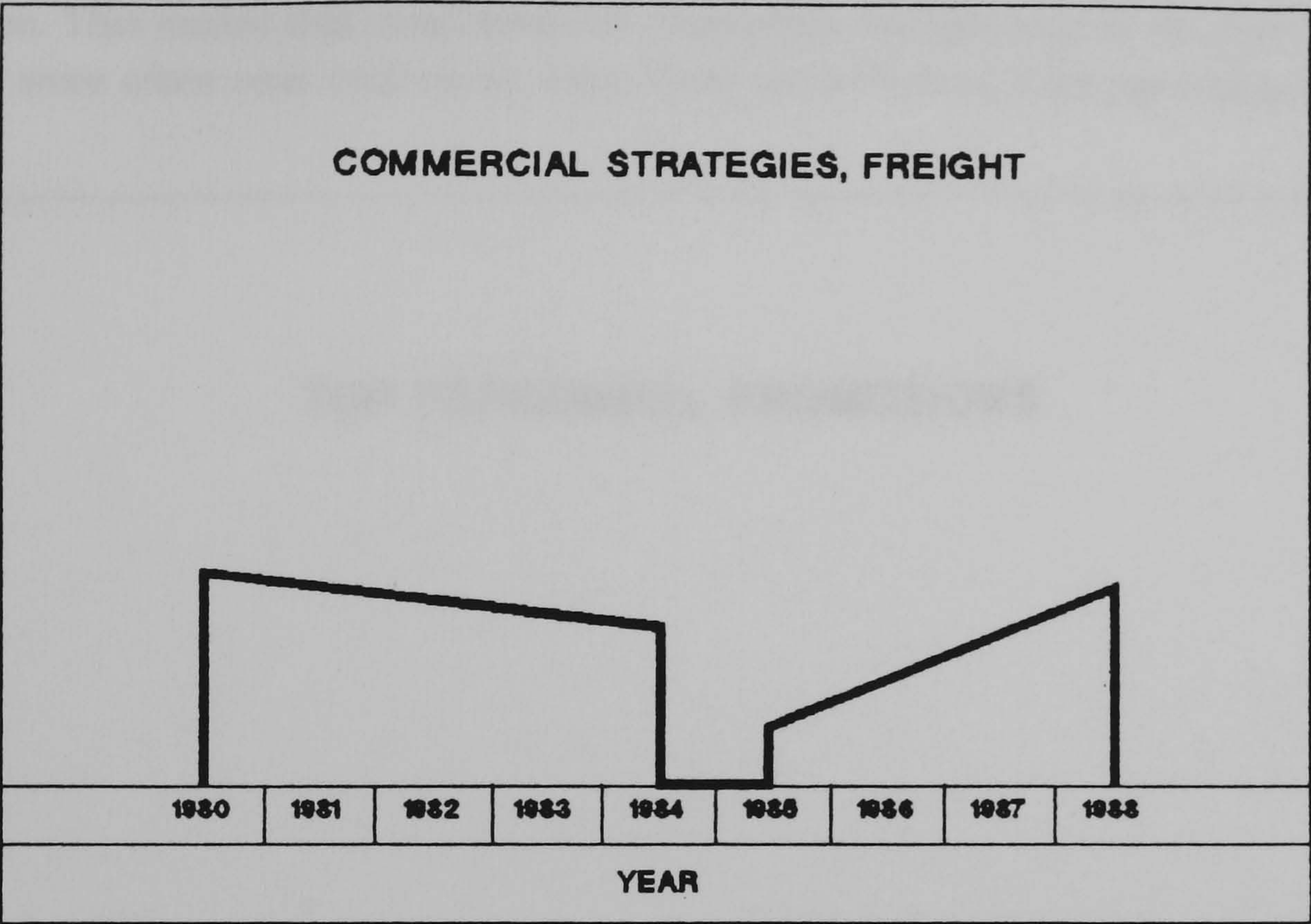


Figure 5.11: Commercial strategy: Special customers, freight

5.2.5. Decisions on Enhancing Organizational Capability

Decisions that fell into this field included personnel training and the reward/incentive systems. Concerning personnel training, Board’s decisions referred only to approvals of educational leaves of absence. These decisions exhibited a sporadic pattern, since the applications were submitted to the organisation by employees who wished to conduct postgraduate studies and were very rare. All other decisions concerning employees’ training were made by the Assistant General Manager and the General Manager (they did not fall into the Board’s jurisdiction) and substantiated a programme that aimed to enhance personnel’s technical and other skills. This programme was set up in 1986 and was still on in 1989.

Concerning the reward/incentive systems, decisions that fell into this area referred to board’s activity associated with promotions to the post of the Head of Department. The decision graphs exhibited a peak and valley pattern, the peaks being quite low and the valleys not very deep. **Figure D20 (Appendix D)** shows the percentage distribution of decisions concerning top personnel promotions while **Figure 5.12** depicts the implied

strategy. Appointments of Heads of Departments occurred quite often and this may be attributed to the system of seniority for personnel’s promotion that existed in the organization. This means that candidates for these posts had gone up all the hierarchical ladder and were often near retirement. thus, their tenure varied from several months to few years.

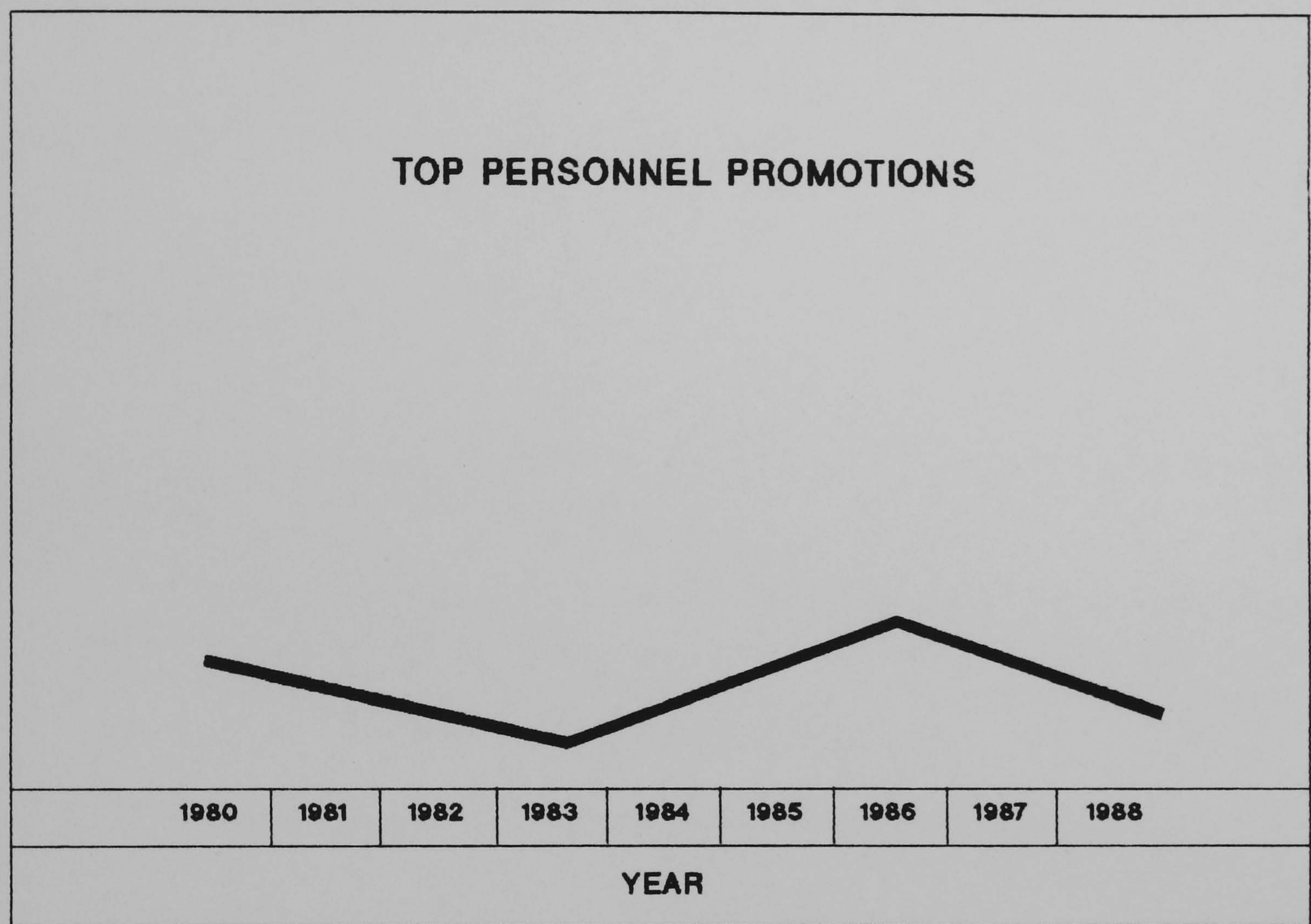


Figure 5.12: Reward and Incentive Systems: Top Personnel Promotions

5.3. SYNOPSIS

The main purpose in this chapter was to illustrate the way in which the enterprise developed its strategies over the period of the plan’s implementation. Strategies here are the consistent patterns of decisions in the various decision-areas. What the chapter revealed was that Board’s decisions covered a wide area of organizational activities. They were ranging from resources’ allocation for modernization projects to approvals of special tariffs for freight customers, or from decisions concerning structural rearrangements to decisions referring to legal matters. In total, 49 decision-areas were identified. The patterning of decisions within these decision-areas exhibited much

variety. There were consistent patterns, cyclical patterns, emerging patterns, and, finally, sporadic ones. This showed that, in some areas, there was a constant flow of activities, in other areas, decisions exhibited a propensity to converge, yet this was never achieved, while in some areas, an ever-increasing number of decisions denoted an area of importance (or a situation denoting a problem or an opportunity).

CHAPTER 6

ANALYSING DATA AT THE INDIVIDUAL LEVEL

6.1. INTRODUCTION

As stated in the methodology chapter, the research was planned against a background of premises which involved the following:

1. Using and analysing sources of data demonstrating change, process, or stability (archival evidence, publicly presented documents concerning major organizational issues, organizational reports, etc.) that are related to the phenomenon inquired, in particular to the implementation process of the Strategic Plan.
2. Understanding the perspectives or "*attitudes*" of the decision-makers in terms of their operationalization of strategy, illustrating which concepts have been associated with it and how they were related to each other.
3. Linking the strategists' perceptions with the specific context in which they occurred.
4. Combining results arising from these different data- sources in order to account for the way in which strategies were formed in a public organization and for the role of Board-members in shaping their formation.

The main objective is to study strategy formation as an historical, contextual process. So far, only the first area was dealt with (**Chapter 5**). The purpose of this chapter is to understand the meaning that the Board-members attached to strategy. The chapter, based on empirical evidence from the in-depth interviews with Board-members, is concerned with mapping the strategists' rationales in terms of the definitions of strategic decisions and the influences upon them, stemming either from the organizational or the external environment at the individual level. Cognitive maps are the graphic

representations of sets of discursive representations made by the Board-members with regards to strategic decisions (Cossette and Audet, 1992) and are constructed by the researcher.

The analysis consists of two steps that refer to the different data-sources used. Thus, the first step entails the analysis of retrospective interviews by means of influence diagrams; and the second step provides a tabulation of the scores on matrices and investigates further the type of the relationships between two cognitive elements by analyzing square matrices.

6.2. KEY CONCEPTS GOVERNING THE ANALYSIS

6.2.1. Environments

Aldrich (1979) asserted that there are two streams in current theorizing and research in relation to the way the term "*environment*" is used:

The first approach, centres on theories of perception, cognition and decision-making, focuses on the environments as seen through the eyes of organisational members. The "*environment*" thus consists of information serving as raw material and acted on by sentient actors. Variation in information about the environment, as filtered through members' perceptions, is the major factor explaining organizational change.

The second approach relies heavily on theories of the firm as defined in macro-economics, and argues that competition for the level of resources as well as the terms under which they are made available are the critical factors for organizational change.

Aldrich recognised that these two views are identified with the natural and rational selection models of the organizations. Further, he noted that a link between them could be originated if in a research design decision-makers' perceptions of dependence are treated as playing a part in determining an organization's response to a situation of dependence.

Daft and Weick (1984) built a model of organizations as interpretative systems of the environment, expanding thus Weick's previous work on the same topic. Though Weick's (1979) central argument was that organizations create and constitute the environment to which they react and that the environment is put there by the actors within the

organization and by no one else, there was no confrontation of the issue raised by the different perceptions of actors concerning the environment. Whether such differences were due to actors' structural positions, experience, or idiosyncratic factors was left unanswered. The model proposed by Daft and Weick tackles this issue in a different manner. It is based on four assumptions:

The first is that the organizations being open social systems process information from the environment and then base organizational action on it;

The second concerns the distinction between individual and organizational interpretation process and states that the latter is something more than what occurs by individuals;

The third is that strategic level managers formulate the organization's interpretation because it is at this level that participants are informed on issues pertaining to the organization as a whole; and

The fourth states that organizations differ systematically in the process by which they interpret the environment and these differences are due to organizational as well environmental characteristics.

As it can be inferred from the above assumptions, the authors subscribed to an organizational interpretation shared among strategic actors who constitute the interpretation system. Whether their assumption that managers converge on an approximate interpretation holds true needs to be supported by analytical evidence and this is what the present thesis aims to provide and evaluate.

Furthermore, the environment will be treated as information made available to the strategists but also as information the strategists missed, either they sought or took for granted. Or as Hambrick (1989) asserted, *"in the face of the complex, multitudinous and ambiguous information that typifies the top management task, no two strategists will identify the same array of options for the firm; they will rarely prefer the same options; if by remote chance they were to pick the same options, they almost certainly would not implement them identically"* (p. 5). However, this knowledge is only possible by reference to the independent information (not coming from decision-makers' views) evaluated in the previous chapter and Appendices A and B of this study.

There are three questions to be asked at this phase: (1) Which are the judgmental processes of the decision makers revealed through their cognitive maps, focusing on one or more segments of the relevant environment rather than others? (2) How are different

decisions influenced by those perceived environments? and (3) Which are the relationships among strategic decisions themselves?

The patterns in strategic decisions examined may be systematic, in the sense that interrelations are depicted among different strategic areas, or discontinuous, in the sense that strategic areas seem disjointed or isolated. The number of influences attended to by the decision-makers may vary from one individual to another. The next section discusses, therefore, the necessity for a disaggregated analysis.

6.2.2. Roles Assumptions

According to **Quinn's (1980)** political-incremental view of strategy-making, skilled strategic level managers guide their organization toward intentionally vague objectives by taking advantage of opportunities that move it incrementally in the desired direction. Specific strategies, tactics and solutions emerge from within the organization as operational managers respond to their respective environments. Top management selects, refines and melds these responses into a coherent strategic thrust, an overall logic stemming from a strategic vision. Communication and cohesion (shared understanding of the strategy and its implications) help develop consensus and commitment and enhance management's ability to coalesce around an emerging strategic vision affecting thus the outcome of strategy making process.

However, the factor that would homogenize strategists' experiences and values and reduce the tendency to identify with organizational divisions and subcultures (**Etzioni, 1975**) is the issue of much controversy. As many authors pointed out, decision makers' perceptions of the environment differ in terms of the motives/objectives of the interest groups involved in the process, the nature of the environment perceived (complex, dynamic, uncertain), and the number and type of organizational units (**Lawrence and Lorsch 1967, Bacharach, 1978, Tung 1979**). As evidence in boards' studies has revealed (**Chapter 2**), conflicting results and recommendations are obtained and this may be due to the variety of roles board-members often play. This calls for a disaggregated view of the organization-environment interaction, where each strategist's rationalization about strategy could be highlighted in its own terms.

Decision-makers' assumptions about their roles stemming from the divergence of their interests, occupational heredity, previous organizational experience and ties to principles derived by their association with political parties have to be taken into consideration. The composition of the Board under study (consisting of managers, state officials, and employees' representatives) calls for the identification of major sources of consensus or conflict over priorities, values, and goals. Questions of whether members in different roles and hierarchical levels perceive the same organizational reality have to be drawn

upon and attention has to be paid to the relation between participants' structural position and their perceptions.

It could, therefore, be interesting to reveal what people in boundary-spanning roles (roles linking an organization to external units) feel about their position, and about that of their counterparts. The time and the actual process by which they were appointed play also a central role and delineate the conditions under which members' discretion can have a significant impact on change. How often these conditions rise should be examined and an attempt to interweave them with the perceptions in hand must be made. In line with Child's (1972) thesis that environment, technology and size are not totally responsible for organizational change or stability, organizational elites and other members of powerful coalitions possess a wide range of discretion and autonomy for decision-making and thus occasionally have the power to manipulate and control their environments. It is essential therefore to highlight their perceptions and evaluations of events as an important intervening link between environments and organization's actions.

Concluding, the first step of the analysis aims at providing configurations in terms of the concepts that operationalize strategy according to each strategist. Identification of concepts is only the first step; the second one is to discover the rules of their articulation, if any, as well as, to "*sense*" what is not included, either being concealed or taken for granted. The ultimate aim is to embed these cognitive structures in a social context and then look at how these structures have impacted the implementation of the strategic plan.

6.3. CONSTRUCTION OF THE COGNITIVE MAPS

6.3.1. Introduction

As described in the methodology chapter, a causal cognitive map offers a graphic representation of the web of interrelationships bearing on an issue (Diftenbach, 1982; Huff, 1989). It focuses on influences among elements and in this specific case among concepts leading to the definition of a decision as "*strategic*". The following section describes the process by which the strategists' cognitive maps were constructed. For the research purposes, a split of the graphs into three distinctive areas was undertaken; the strategic decision area, the area that includes the external influences and the area of organizational variables/intervening variables.

The basic components of the causal cognitive maps were also illustrated. Factors (cognitive elements), links, chains, loops, and the way they have been derived and incorporated into each map is described in detail in the following section.

6.3.2. The Process Followed for the Construction of the Maps

The following five steps describe the process by which cognitive maps were produced.

Step 1: Illustration of the strategic decisions and related areas

The diagram is partitioned into three areas that display the focus of the research interest: the strategic decisions area, the internal environment of the firm, and the external impact.

Step 2: Specification of the key elements involved concerning strategic decisions

From the transcripts of the strategists' interviews a list of all the factors, perceived by the strategists as having influenced the strategic decisions, was produced. All other elements that were not related by any means to the chains of reasoning of strategic decisions were omitted.

Step 3: Turning elements into variables

Each element was expressed as a variable representing the level or rate of something. For example an element described as *"we feel uncertain about the reliability of statistical data that are collected to measure traffic load"* was transformed into the *"level of reliability of statistical data concerning traffic load"*. It should be stressed here that this task was one of the most time consuming in the data analysis process since whole sentences found in different points in the interview transcripts but having a common thematic content, had to be condensed into one single box (depicting graphically a variable). The definitions of variables used by each strategists are provided in the respective influence diagram. The rationale for the links between these variables, based on the transcripts, is included in **Appendix E**.

Step 4: Specification of the interrelationships among the variables.

Lines were drawn connecting the variables for which a perceived influence was expressed in the strategists' accounts. Arrows at the ends of these lines indicated the direction of the influence and two kinds of mathematical signs (+), (-), were used to define whether there was a direct relationship between two variables or an inverse one.

The influence diagrams constructed in the manner described above are presented and analysed in the following section

6.3.3. The Influence Diagram of STRATEGIST 1

The diagram is depicted in **Figure 6.1**. Strategist 1 was the acting General Manager of the enterprise.

6.3.3.1. Chains Including Strategic Decisions

Implementation of the Rail Plan

LOEG + ROI15 + QMSG + RTI + LNE.....(positive chain)
 LOEG + ROI15 + QMSG + PROE.....(positive chain)
 LOEG + ROI15 + QMSG + RTI + LUC.....(positive chain)
 RGIIMP + ROI15 + QMSG + RTI + LNE.....(positive chain)

From the General Manager's point of view, there was a strong positive influence between the level of funding either from E.E.C. or the Government, and the ultimate benefits to stakeholders. Stakeholders were considered to be both the users and non-users of the railway services and benefits to them were translated into both concrete economic terms (National Economy) as well as into more abstract social ones (environment, comfort). The means to achieve those benefits was railway development, substantiated by the railway development plan.

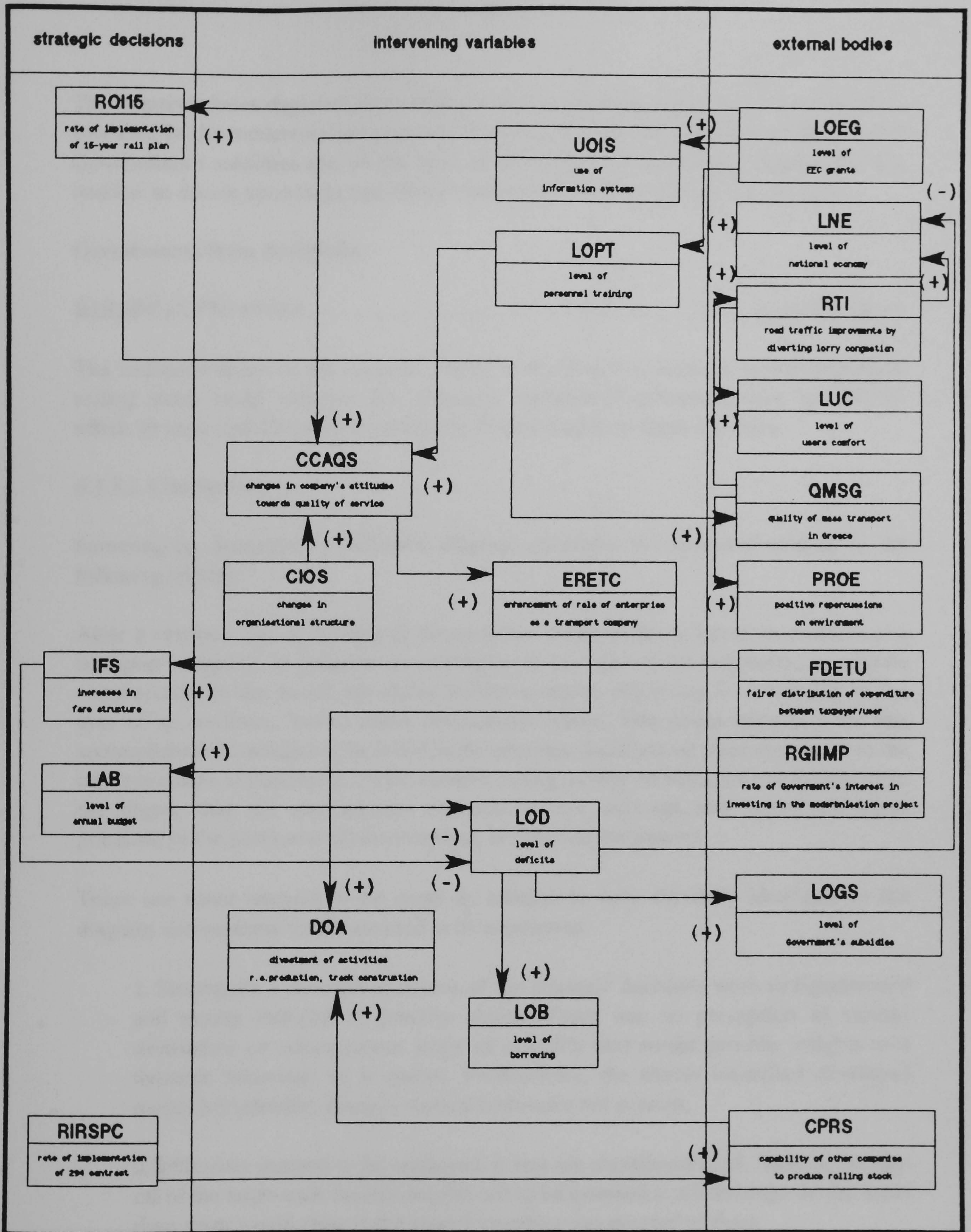
Commercial Policy: Fares Structure

FDETU + IFS-LOD-LNE.....(positive chain)

The General Manager considered the present pricing policy to be unfair to the tax-payer at least for the sections of the network he defined as commercially viable. The argument commonly advanced in favour of low rail fares was that transportation is a social service and as such it should be available to all incomes. The General Manager's view was different and indicated that a proper pricing policy would exert a positive influence on the National Economy by reducing the level of deficits.

Annual Budget: Investments/Financing

RGIIMP + LAB-LOD + LOGS.....(negative chain)
 RGIIMP + LAB-LOD + LOB.....(negative chain)



**Figure 6.1: Strategist 1 (General Manager)
Influence Diagram of Strategic Decisions**

The negative chains depicted above indicate that an increase in the rate of Government's investing in the modernization plan would lead to a downward pressure on the level of Government's subsidies and on the level of borrowing. Thus, a strong political will was needed, to decide upon large and timely investment in the railway's modernization.

Divestments from Activities

RIRSPC + CPRS + DOA.....(positive chain)

The implementation of the contract 294/83 concerning the domestic manufacturing of rolling stock could enhance the domestic manufacturing/maintenance capabilities which, in turn, could lead the organization to divesting from these activities.

6.3.3.2. Conclusions

Summing up, Strategist's 1 influence diagram articulates the notion of strategy in the following scheme:

After a constant rate of funding is secured, the company has to stress its mission as a transport company, to enhance its credibility in the eyes of its customers, to operate commercially in the financially viable railway sections, enhancing its credibility in the eyes of its creditors, and to make divestments moves. Two issues important for this accomplishment, though not included in the strategic-decisions set were connected to the relevant chains of reasoning: (1) personnel training (rather meaning here re-educating to the degree that the new mission necessitates new attitudes and behaviours never practiced in the past), and (2) intensive use of information systems.

There are some remarks to be made in relation to both the links identified in the diagram and concepts totally avoided to be mentioned:

1. Strategist's 1 conceptualizations of the strategic decisions were straightforward and mostly included in positive chains. There was no perception of various destructive or advantageous loops of causality that would provide insights to a dynamic behaviour of a system. Furthermore, the chains identified developed mostly horizontally, whereas vertical links were not present.
2. Efficiency seemed to be neglected; it was not mentioned at all. That is, the pay-off of the large-scale investment was left to be assessed at a later stage. In the mean time, costs would arise if not proper attention was devoted to them.

3. It is not so easy to assume that a commercial policy like the one advocated by the General Manager could find its way without opposition from administrative sectors, even though on the General Manager's side lied a strong argument, related to the common transport policy and associated legislation when European Market will be integrated; however, these conditions were far from being established.
4. Divestments could give rise to "*traditional reacting*" on the part of trade unions protecting thus their right to work, or even managers of powerful units feeling threatened by this major change. There was no reasoning concerning how to achieve consensus and/or how the already done restructuring of the organization had promoted a different power base.

6.3.4. The Influence Diagram of Strategist 2

The diagram is depicted in **Figure 6.2** Strategist 2 is the Assistant General Manager of the Enterprise responsible for the Permanent Way, Installations, Signalling and Telecommunications systems.

6.3.4.1. Chains Involving Strategic Decisions

Implementation of the Rail Plan

DGWPR + ROI5 + ROI15.....(positive chain)
 DGWPR-DBA + DCSF-ROI15.....(positive chain)

According to the Assistant General Manager's view, the more the Government is interested in promoting railway development, the more secure and constant are the vital funding sources for the 15-year Rail Plan. He explicitly stated that the implementation of this Plan is directly related to the completion of three 5-year business plans to the degree that the Government incorporates them into the State's 5-year National Development Plan assigning thus financial resources from the Public Investments Programme.

Effectiveness of the Supervisory Board

QGAB-DPOM + RAGED + CDDCG + IOSB.....(negative chain)
 QEAB-DPOM + RAGED + CDDCG + IOSB.....(negative chain)

People appointed by both the Government and the employees, by not having the status to exercise their role (lack of knowledge, lack of interest in the post, lack of ability to debate publicly) led to the Supervisory Board's ineffectiveness.

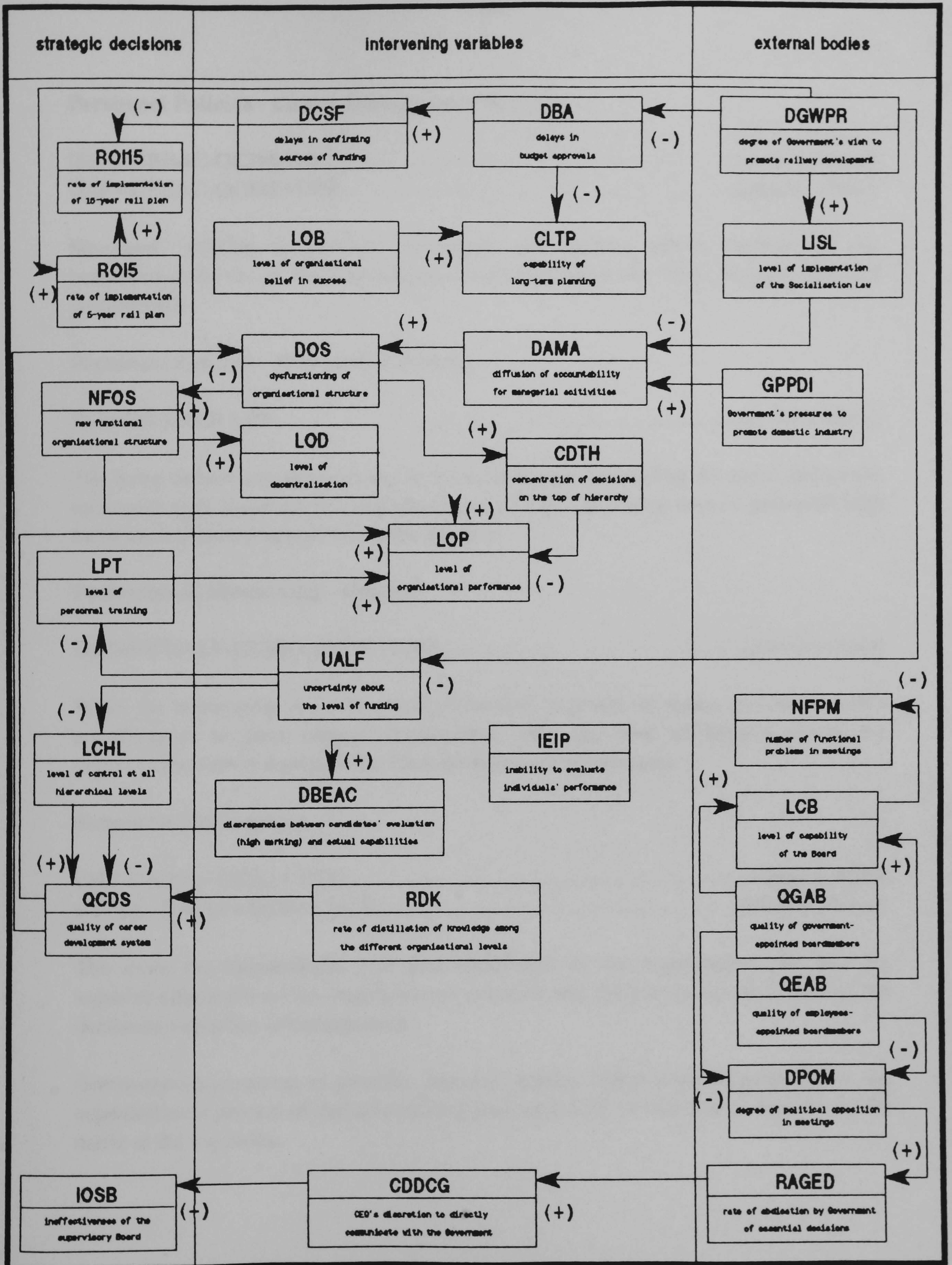


Figure 6.2: Strategist 2 (Assistant General Manager)
Influence Diagram of Strategic Decisions

Personnel Policies - Career Development System

IEIP + DBEAC-QCDS-DOS.....(positive chain)
 IEIP + DBEAC-QCDS + LOP.....(negative chain)

Managers' inability to evaluate personnel's performance affects destructively the institutional forms of the organization and diminishes the level of organizational performance.

Personnel Policies - Personnel Training

DGWPR-UALF-LPT.....(positive chain)

The more certain and secure is the level of Government's funding the more certain the enterprise feels about the accomplishment of its goals, providing thus its personnel with more incentives and opportunities for training.

Performance Monitoring - Control

DGWPR-UALF-LCHL + QCDS + LOP.....(positive chain)

When the uncertainty about the level of funding increases by means of Government's unwillingness to fund railway development, then the level of control within the organization, lowers significantly. Thus, performance deteriorates.

Structural Deficiencies

LISL-DAMA + DOS + CDTH.....(negative chain)
 GPPDI + DAMA + DOS + CDTH.....(positive chain)

The more the Socialization Law gets established in the organization, the less the negative effects are on the organizational structure and the less the concentration of the decisions on the top of the hierarchy.

Government's pressures to promote domestic railway industry caused problems in the organizational process of decision-making leading thus to an increase in decisions to be made at the top ranks.

6.3.4.2. Conclusions

The set of strategic decisions and their chains of causality could delineate Assistant General Manager's view of strategy. Funding is vital for the implementation of the Rail Plan. Delays in budgets approvals as well as budgets' truncations lead to distortive phenomena in the control function, which in turn partially affect the personnel's career paths. Managers' limited capacity to evaluate personnel's performance contributes negatively to the career development system. He considers personnel's training as central to the implementation of the Plan but under conditions of certainty about the level of funding. Overall, an organizational climate stagnates the management development systems and personnel training deserves attention only if there are clearly stated commitments on the part of the Government.

There are some remarks to be made in relation to the diagram presented above:

1. All strategic decisions are included into horizontal chains having as an initial influencing variable one representing the Government as an external constituency.
2. There are no loops, thus no dynamic effects of the issues are identified.
3. There are some direct links between strategic decisions, namely control/careers system and 5-year business plan/15-year Rail Plan.
4. There are two important direct links that have to be highlighted, that will be utilized in the analysis of the second stage: (1) a communication problem regarding the distribution of information and knowledge transmitted among the different hierarchical levels (RDK+QCDS) (and a possible association with the inefficient control processes), and (2) a variable registered as organizational belief in success which is directly related to the organization's ability of long-range planning (LOB+CLTP).

6.3.5. The Influence Diagram of Strategist 3

The diagram is depicted in **Figure 6.3**. Strategist 3 is a Boardmember appointed by the Government (Governmental representative 1).

6.3.5.1. Direct Links Involving Strategic Decisions

Implementation of the Rail Plan

RGF+ROI15

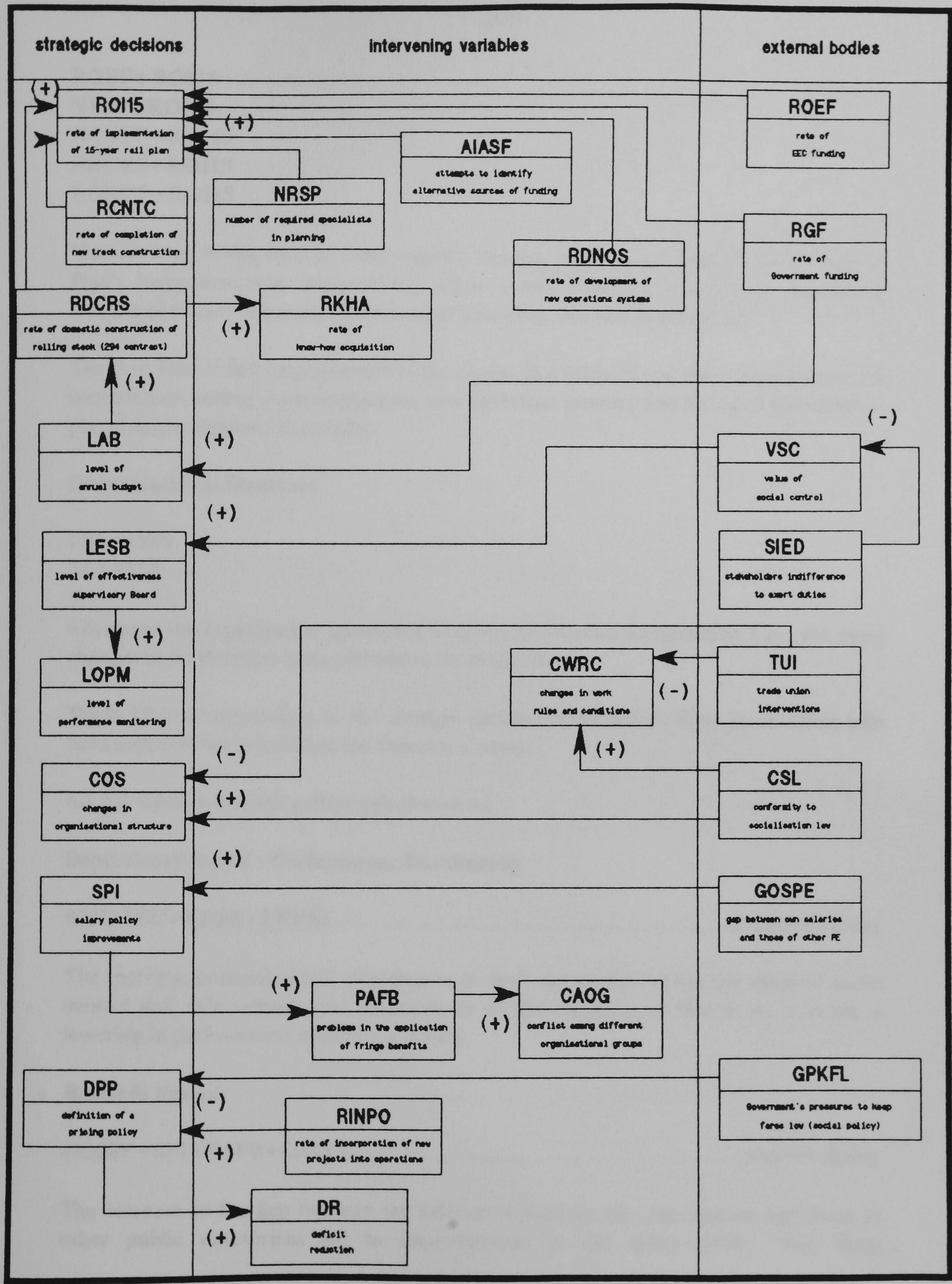


Figure 6.3: Strategist 3 (Gonernmental Representative 1)
Influence Diagram of Strategic Decisions

ROEF+ROI15
 NRSP+ROI15
 RCNTC+ROI15
 RDCRS+ROI15
 RDNOS+ROI15

The increase in the rate of Government's funding leads to an increase in the rate of Plan's implementation. Alternatively, when a new source of funding is considered, because of the inadequacy of Government's funding, this rate is enhanced.

The Rail Plan is fully implemented to the degree that projects and plans concerning track construction, rolling stock acquisition, new operation systems, and hiring of specialists in planning are deployed in parallel.

Organizational Structure

CSL+COS
 TUI-COS

The more the organization attempted to conform with the Socialization Law, the more changes in its structure were planned to be initiated.

Trade Unions' opposition to the changes decided upon, led to their inactivation (the final approval being halted at the Superior Court).

6.3.5.2. Chains Involving Strategic Decisions

Supervisory Board - Performance Monitoring

SIED-VSC+LESB+LOPM.....(negative chain)

The increase in stakeholders' detachment in their duties diminishes the value of social control and this reduces the effectiveness of the Supervisory Board. As a result a lowering in performance monitoring occurs.

Rewards System

GOSPF+SPI+PAFB+CAOG.....(positive chain)

The increase in the gap between the salaries offered by the organization and those of other public enterprises led to improvements in the salary system. Yet, these

improvements generated problems as to whom some fringe benefits could be allocated and this resulted in conflicts among different occupational groups.

Pricing Policy

GPKFL-DPP + DR.....(negative chain)
 RINPO + DPP + DR.....(positive chain)

The more pressures the Government is exerting on the company to keep fares low, the less the company is able to design a clear pricing policy and reduce deficits.

The more modernized sections are incorporated into the network, the more the company will be able to determine its own pricing policy and the more a reduction of deficits will be achieved.

6.3.5.3. Conclusions

The set of strategic decisions of Government's Official introduces the following concept of strategy:

Government's funding is central for the implementation of the Plan, though recently the possibility for a new source emerged. The organizational restructuring in alignment with the Socialization Law was blocked because of trade unions opposition. The Supervisory Board did not succeed in its mission thus organization's performance auditing never took place. Although personnel salaries improved there were problems in assigning fringe benefits and thus conflict surfaced among different organizational groups. The absence of a concise pricing policy because of Government's directives increases the level of deficits.

The following remarks refer to the diagram analysed above:

1. The implementation of the Rail Plan and performance monitoring are influenced only by other factors, but do not influence any factors themselves.
2. Reasoning about control contained only concepts pertaining to the supervisory Board and not to the level of control within the enterprise (unless these two were related implicitly).
3. Changes in organizational structure and changes in work rules and regulations belonged to two direct links of opposite signs.

4. There are no links among the defined strategic decisions. Only horizontal chains were mostly depicted.
5. There are no loops, either positive or negative, other than a few very obvious.
6. All the external bodies influencing strategic decisions are related to Government policies or State legislation.
7. Given the overwhelming role of Government, the belief that degree of network's modernization would define pricing policy is questionable since no other links are apparent with other strategic decisions.

6.3.6. The Influence Diagram of Strategist 4

The diagram is depicted in **Figure 6.4**. Strategist 4 is a Boardmember appointed by the Government (Governmental representative 2).

6.3.6.1. Links Including Strategic Decisions

Annual Budget

ROGF+LAB
SGEP-LAB

The unique source of funding is Government. The more severe Government's economic Policy becomes the less funding the organization gets.

Implementation of the Rail Plan

LAB+ RIMP

The more money the company gets from government the higher the rate of implementation of the modernization plan.

Pricing Policy

GPKFL-DPP

The more pressures are exerted by Government on the enterprise in order to keep fares low, the less the enterprise is capable to define a pricing policy that will fit its needs.

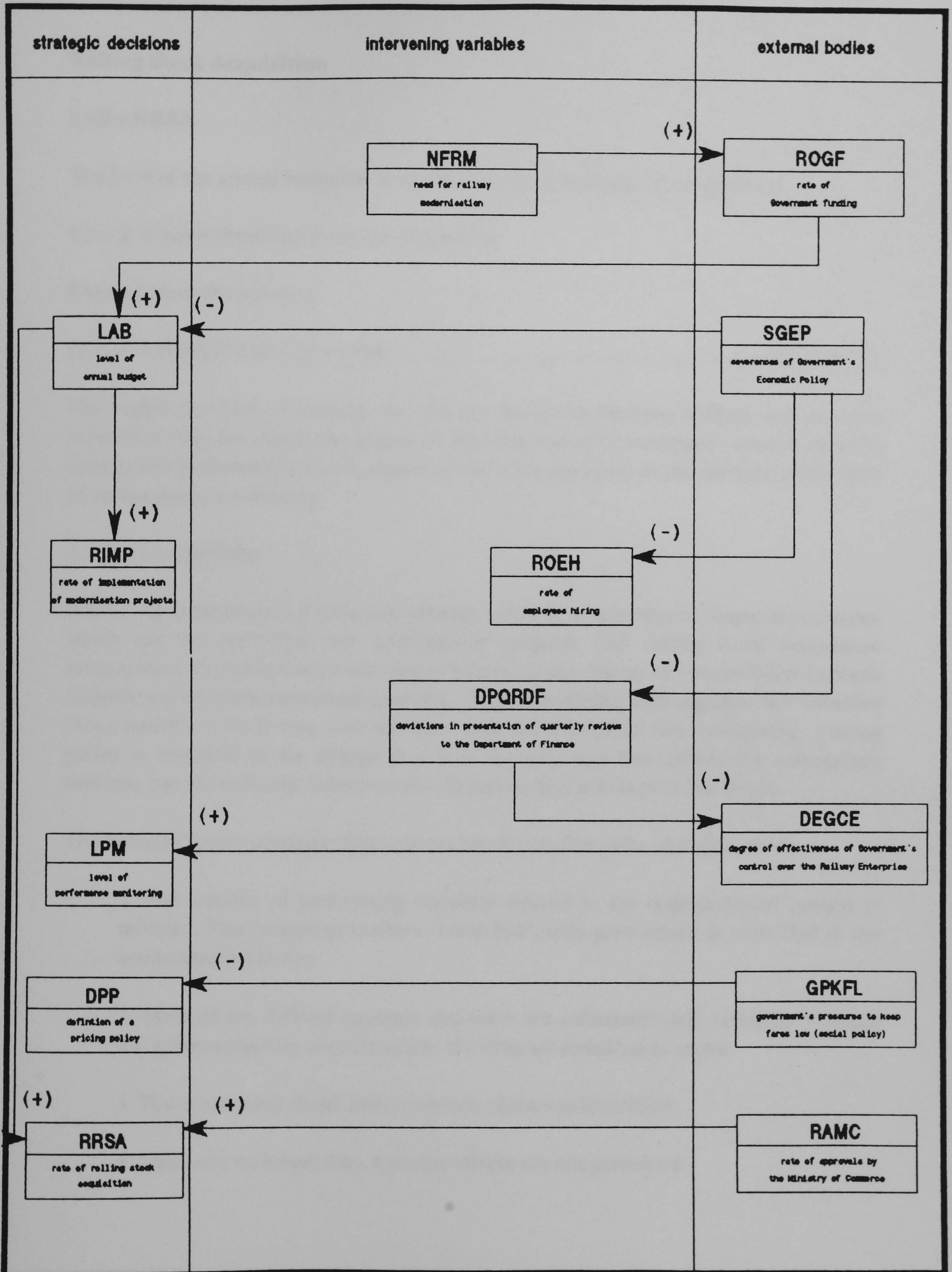


Figure 6.4: Strategist 4 (Gonernmental Representative 2)
Influence Diagram of Strategic Decisions

Rolling Stock Acquisition

LAB+ RRSA

The level of the annual budget determines the rate of rolling stock acquisition.

6.3.6.2. Chains Involving Strategic Decisions

Performance Monitoring

ROGF-DPQRDF-DEGCE+ LPM.....(positive chain)

The higher the level of funding, the less the deviations between budgets and accounts submitted, thus the higher the degree of effectiveness of Government's control over the enterprise's performance which, overall, contributes positively to the increase in the level of performance monitoring.

6.3.6.3. Conclusions

According to Strategist's 4 rationale, strategy refers to acquisition of financial resources, which can be converted into construction projects, and rolling stock acquisition programmes. Performance monitoring is related to the degree of compatibility between budgets and accounts submitted quarterly. This compatibility also signifies how effective Government's control was, and also how well the enterprise was functioning. Pricing policy is essential to the degree that it is the only one that affects the enterprise's revenue, but has to follow Government's directives thus it is kept at low levels.

The remarks below, sensitize the reader to reveal possible paths of explanations.

1. The number of intervening variables related to the organizational context is minimal. The enterprise is like a "*black box*"; only government is identified in the environmental sector.
2. Most of the defined strategic decisions are influenced-only variables, whereas the influencing-only ones lie within the external constituents sector.
3. There are many direct links; only one chain was identified.
4. There are no loops; thus, dynamic effects are not perceived.

5. The annual budget is influenced by two opposing variables; the need for railway modernization affects Government's funding rate positively, whereas the severeness of National Economic Policy leads to its reduction.

6. Few strategic decisions are interrelated with each other.

6.3.7. The Influence Diagram of Strategist 5

The diagram is depicted in **Figure 6.5**. Strategist 5 is a Boardmember appointed by the employees (Employees representative 1).

6.3.7.1. Chains Involving Strategic Decisions

Implementation of the Rail Plan

ROI15+LRC+NEG.....(positive chain)

The more the Rail Plan gets implemented the more the position of the railways renders competitive and thus it contributes to national economic growth.

Divestment from Rolling Stock Activities

RDRSA + NLTDCA + RSH + RSR + LOP.....(positive chain)

An increase in the rate in which the organization divests from rolling stock activities increases the number of long term construction agreements. This contributes to rolling stock standardisation and enhances the reliability of rolling stock units, increasing, thus, the level of organizational performance.

Pricing Policy

GPKFL-CDPP-PDRB.....(positive chain)

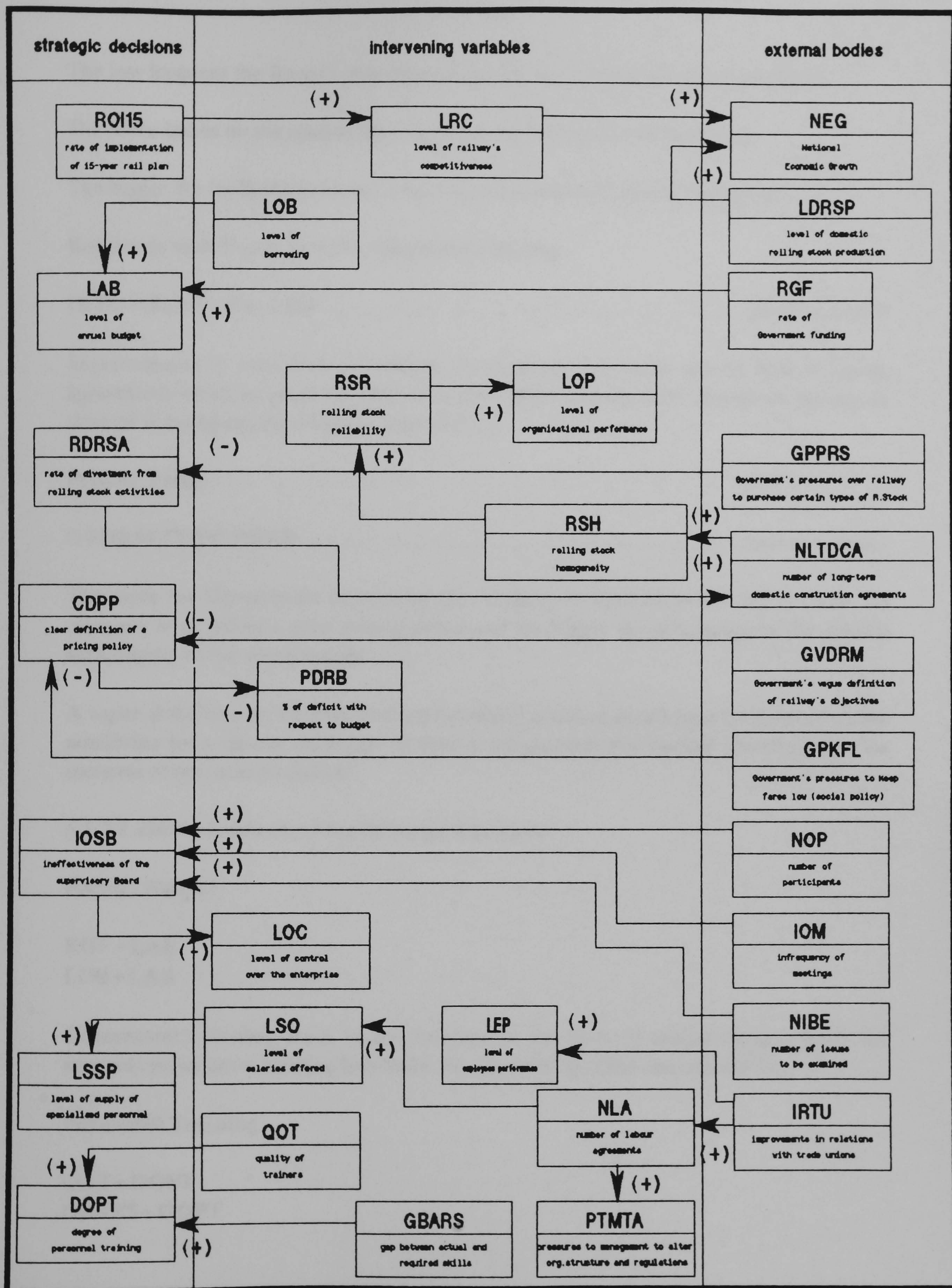
Supervisory Board

NOP+IOSB-LOC.....(negative chain)

IOM+IOSB-LOC.....(negative chain)

NIBE+IOSB-LOC.....(negative chain)

The bigger the number of participants in the Supervisory Board the more ineffective it becomes.



**Figure 6.5: Strategist 5 (Employees' Representative 1).
Influence Diagram of Strategic Decisions**

The less frequent the Board's meetings the bigger the ineffectiveness of the Board.

The more issues on the agenda the bigger the ineffectiveness of the Board.

The bigger the ineffectiveness the less control is exercised over the enterprise.

Relations with Trade Unions - Specialists Hiring

IRTU + NLA + LSO + LSSP.....(positive chain)

Improvements in relationships between management and trade unions lead to labour agreements which increase the level of salaries offered; thus, more specialists express an interest in being employed by the organization.

Pricing Policy

GVDRM-CDPP-PDRB.....(positive chain)

The more the Government is pressing the company to keep fares low the less able the company is to define a clear pricing policy and the bigger the percentage of the deficits with respect to the social budget.

A vague definition on the part of the government about railway's mission diminishes the possibility for a clearer definition of their pricing policy, and further contributes to the increase of operational deficits.

6.3.7.2. Direct Links Involving Strategic Decisions

Annual Budget

RGF + LAB

LOB + LAB

Government's funding leads to the increase in the level of annual budget; when the amount cannot cover existing liabilities, then borrowing is the only alternative.

Personnel Training

QOT + DOPT

GBARS + DOPT

The more qualified the trainers are to accomplish their duties the more effective personnel training will be.

The bigger the gap between actual and required skills to implement the Plan, the bigger the degree of required personnel training.

6.3.7.3. Conclusions

Summing, Strategist's 5 view of strategy may be expressed according to the following framework:

The Government has absolute discretion to allocate financial resources to the Plan's implementation. Rolling stock acquisition policies create problems of service reliability; thus, divestment from rolling stock repair/maintenance activities should be preferable if the organization is going to strive for a higher level of overall performance. Though pricing policy is in Government's hands, a clearer definition of railway's mission would reduce deficits incurred in the social budget. Various problems rendered ineffective the functioning of the Supervisory Board, lowering thus the level of control over the organization. Emphasis has to be placed upon the maintenance of good relationships with trade unions and upon personnel training. The degree to which offered salaries are satisfactory may attract a number of specialists to the organization, assisting thus in the plan's implementation.

There are some remarks to be made on this diagram:

1. Strategic decisions are rather isolated on the left hand side of the diagram. There are no links among them. Horizontal links and chains were identified.
2. Rolling stock activities (acquisition, repair, maintenance) are subject to a dual opposing influence; i.e., to governmental pressures to follow bilateral trade agreements and to the enterprise's wish to divest from these activities.
3. The ineffectiveness of the Supervisory Board raises the issue of insufficient control over the enterprise, while good relations with trade unions contribute positively to employees' performance. It seems evident that the issue of control (who controls, by which means and for which reason) was not analysed in depth.
4. Government's influence is perceived as affecting almost half of the strategic decisions.
5. There are no loops perceived.

6. Organizational performance was perceived in terms of rolling stock reliability.

6.3.8. The Influence Diagram of Strategist 6

The diagram is depicted in **Figure 6.6**. Strategist 6 is a Boardmember appointed by the employees (Employees representative 2).

6.3.8.1. Chains Involving Strategic Decisions

Implementation of the Rail Plan

ROI15+ETP-LCE.....(negative chain)
ROI15+ETP-LOS.....(negative chain)

The more the plan was implemented, the bigger was the emphasis on construction plans. This led to a reduction in the level of care for the employees coupled with a reduction in the level of quality of services offered.

Modernization Projects

QTS-CEGB-RCMP.....(positive chain)

The better the quality of technical studies of the projects to be implemented, the lesser the contractors' efforts to violate forecasted budgets and schedules. This results in an increase in the rate of completion of the modernization projects.

Organizational Structure - Performance Monitoring

LCTP+ECS+LPM.....(positive chain)
VOO-ECS+LPM.....(negative chain)

The higher the capacity of top managers, the higher the effectiveness of the organizational structure and the higher the level of performance monitoring.

The larger the vagueness of the enterprise's objectives, the lesser the effectiveness of the organizational structure, and the bigger the reduction in the level of performance monitoring.

Rolling Stock Acquisition

LEBP+RRSH-JR.....(negative chain)

IPTD + RRSJ-JR.....(negative chain)
 GVOP + RRSJ-JR.....(negative chain)

The bigger the inadequacy of the Purchases/Traction Departments, the larger the level of the economy generated by some bid proposals, and

The more pressures Government is exerting to fulfil bilateral trade agreements, the higher the rate of rolling stock heterogeneity, resulting in a reduction of service reliability

6.3.8.2. Direct Links Involving Strategic Decisions

Rolling Stock Acquisition

RIRSP + RKHA

The higher the rate of domestic rolling stock production, the higher the rate of know-how acquisition.

Performance Monitoring

LPC-LPM

The lack of planning and control reduces the level of performance monitoring.

6.3.8.3. Conclusions

Summing up, Strategist's 6 concept of strategy can be described in the following terms:

The implementation of the Plan until now was only concerned with technical studies and construction projects, neglecting the quality of services offered, and personnel's needs. Modernization projects are vital for the Plan, though facing difficulties arising from incomplete studies and problematic relations with sub-contractors.

Performance monitoring is affected by dysfunctioning due to bureaucratic phenomena and by the organizational structure which is rendered ineffective by the ambiguous objectives and the low aptitude of top level personnel. Rolling stock acquisition plays also an important role, though there are still constraints that cannot solve the problem of the lack of rolling stock standardisation which directly affects service reliability. Domestic rolling stock manufacturing and personnel training abroad in relevant issues will enhance know-how acquisition. The 5-year State's Development Plan is essential to the degree

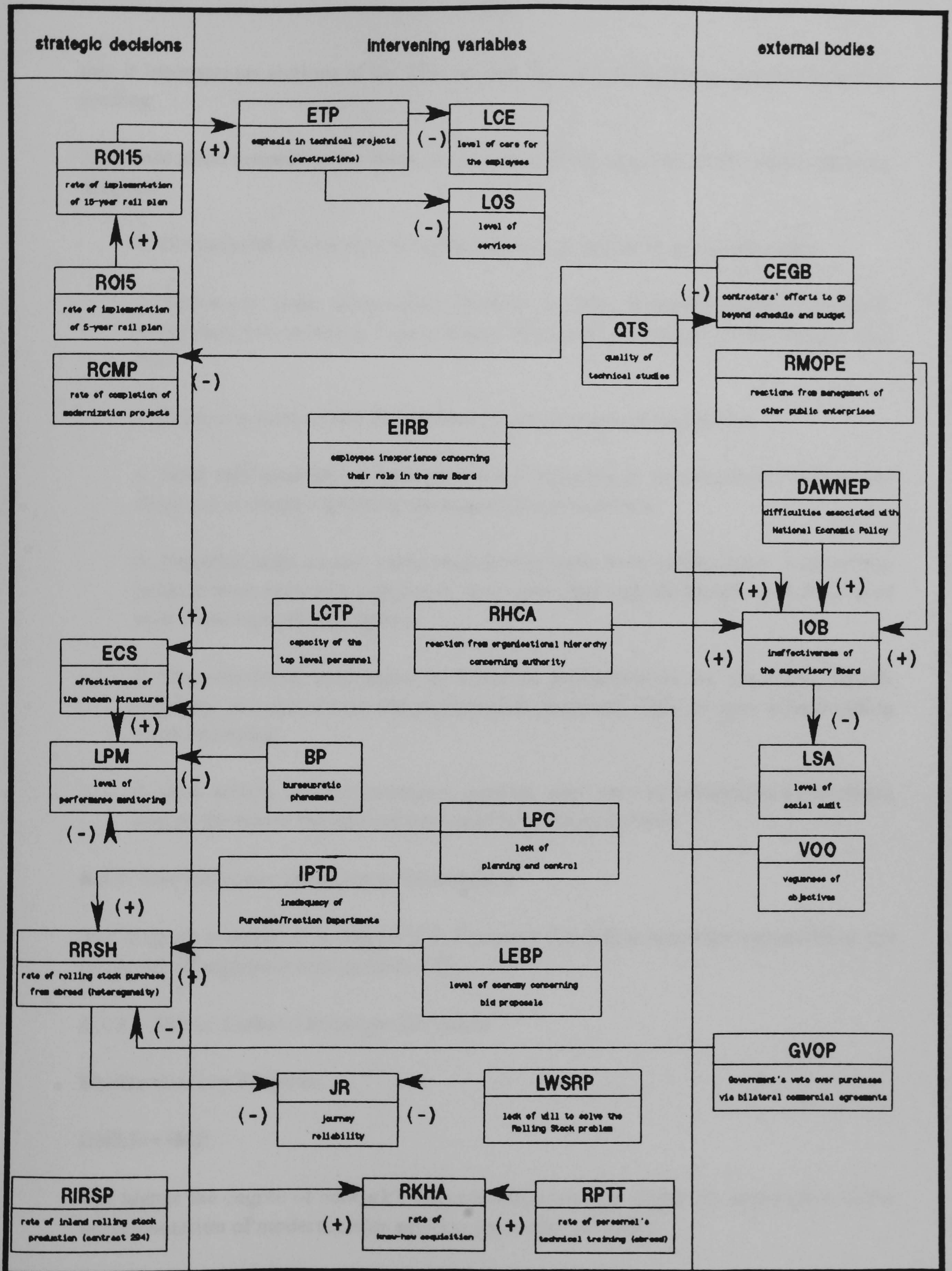


Figure 6.6: Strategist 6 (Employees' Representative 2)
Influence Diagram of Strategic Decisions

that it incorporates sections of the 15-year Rail Plan providing thus a constant source of funding.

There are some remarks to be made in relation with the analysis of the above influence diagram:

1. The majority of concepts is expressed through chains of secondary order.
2. There are some direct links between strategic decisions, namely structure-performance monitoring, 5-year State's Plan-implementation of the 15-year Rail Plan.
3. There is a relative lack of influences from external constituencies.
4. Most relationships are straightforward, referring to organizational factors and there are no loops expressing dynamic states of variables.
5. Negative sides in the implementation process were emphasized: construction projects were seen as a purpose in their own right and the design work associated with them seemed inadequate.
6. Organizational weaknesses in terms of procurements are perceived, mainly problems associated with the procurement processes. This, in turn, affects rolling stock reliability.
7. Goal setting and top managers capacity were seen as integrating mechanisms and performance monitoring was positively related to them.

6.3.9. The Influence Diagram of Strategist 7

The diagram is depicted in **Figure 6.7**. Strategist 7 is a Boardmember appointed by the employees (Employees representative 3).

6.3.9.1. Direct Links of Strategic Decisions

Modernization Projects

DNUD+IMP

The higher the degree of network's underdevelopment, the bigger the importance of the implementation of modernization projects (construction works).

6.3.9.2. Chains Involving Strategic Decisions

Rolling Stock Acquisition

DNUD + NRSA + NKHA.....(positive chain)

The higher the degree of the network's underdevelopment, the bigger the need for rolling stock acquisition (especially domestic manufacturing) which, in turn, increases the need for know-how acquisition.

Annual Budget

GDPF + CAB-LAIPP.....(negative chain)

The higher the Government's discretion to provide funding, the more are the changes in the annual budgets submitted by the organization and thus a reduction in the level of annual investments and purchases budgets occurs.

Organizational Structure

PLCOS + DOS + OESR.....(positive chain)

VLCS + MJB-OESR.....(negative chain)

CPIPV + RIRDS + DOS + OESR.....(positive chain)

The more problems arise out of the lack of co-ordination among the different operational subsystems (track, rolling stock, and operations), the more deficiencies are attributed to organizational structure, and this leads to efforts for organizational restructuring.

The bigger the vagueness of legislation concerning "*socialization*", the more the Board's misinterpretations with respect to its own competencies, and this affects negatively organizational efforts to change its structure.

The bigger the pressures exerted by the General Manager to impose a political view on decisions, the higher the rate of informal repeal of the delegation system currently in use in the organization, and this increases structural deficiencies that in turn lead to efforts to change the existing structure.

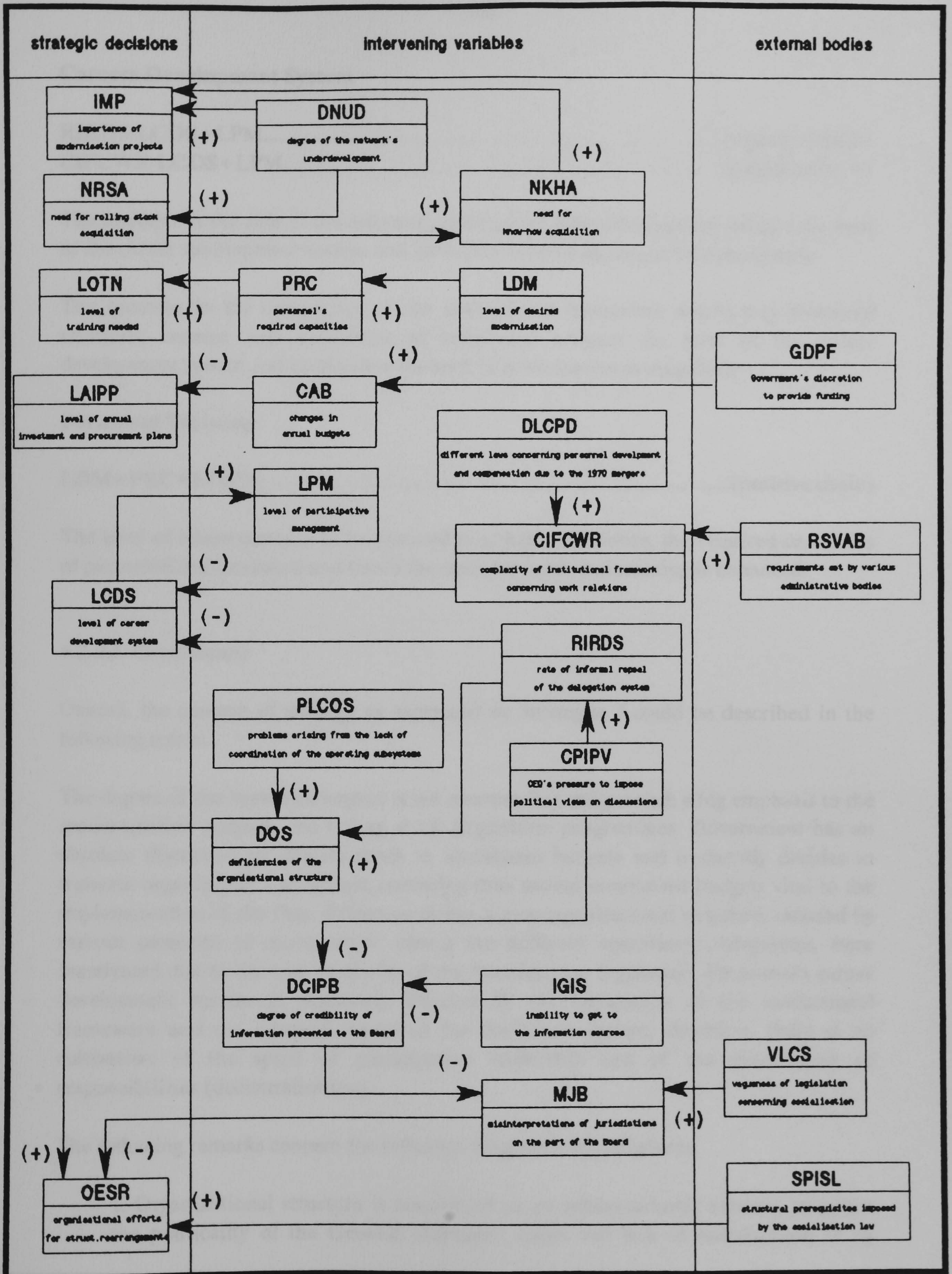


Figure 6.7: Strategist 7 (Employees' Representative 3)
Influence Diagram of Strategic Decisions

Careers Development System

RIRDS-LCDS + LPM.....(negative chain)

CIFCWR-LCDS + LPM.....(negative chain)

The increase in the rate of the informal repeal of the delegation system reduces the level of the career development system and lowers the level of participative management.

The increase in the complexity of the institutional framework concerning personnel relations, careers, and conditions of retirement reduces the level of the career development system and diminishes the level of participative management.

Personnel Training

LDM + PRC + LOTN.....(positive chain)

The level of modernization to be attained to is high. Therefore, the required capacities of personnel are increased and hence the need for personnel training is enhanced.

6.3.9.3. Conclusions

Overall, the concept of strategy as expressed by Strategist 7 could be described in the following terms:

The degree of the network's neglect is the element that assigns such a big emphasis to the modernization projects and rolling stock acquisition programmes. Government has an absolute discretion to allocate funds to investment budgets and frequently decides to truncate organization's proposals, rendering thus annual investment budgets vital to the implementation of the Plan. Efforts to design a new organizational structure, induced by various problems of coordination among the different operational subsystems, were inactivated due to the lack of clarity of the Socialization legislation. Personnel's career development system is negatively affected by the complexity of the institutional framework and the informal repeal of the delegation system; therefore, there is no cultivation of the spirit of participative leadership and of the distribution of responsibilities (decentralisation).

The following remarks concern the influence diagram analysed above:

1. Organizational structure is considered as an influenced-only element by either the politicality of the General Manager's views and lack of coordination or by

external constituents. Thus two chains of opposing influence on organizational structure exist.

2. There are no explicitly stated direct links between strategic decisions.
3. Most strategic decisions are included into chains of second and third order where the majority of concepts come from the organizational environment.
4. Governmental policies are seen as affecting directly only one strategic decision, that is funding through annual budgets.
5. Know-how acquisition is contained as the end-concept into two chains of reasoning concerning strategic decisions.

6.3.10. The Influence Diagram of Strategist 8

The diagram is depicted in **Figure 6.8**. Strategist 8 is the Head of the Department of Planning.

6.3.10.1. Chains Involving Strategic Decisions

Annual Investments Plans

GPKFL + LDOB + LOB-LAIP.....(negative chain)

The bigger the Government's pressures to keep fares low, the higher the level of deficits in the operational budgets which, in turn, leads to an increase in the level of borrowing necessary to cover these deficits.

The more the company borrows for covering operational deficits the less able it is to find money for the requirements of its annual investments plan.

6.3.10.2. Direct Links Involving Strategic Decisions

Annual Investments Plans

LOB-LAIP
LOB+LAIP
LAIP+LOB

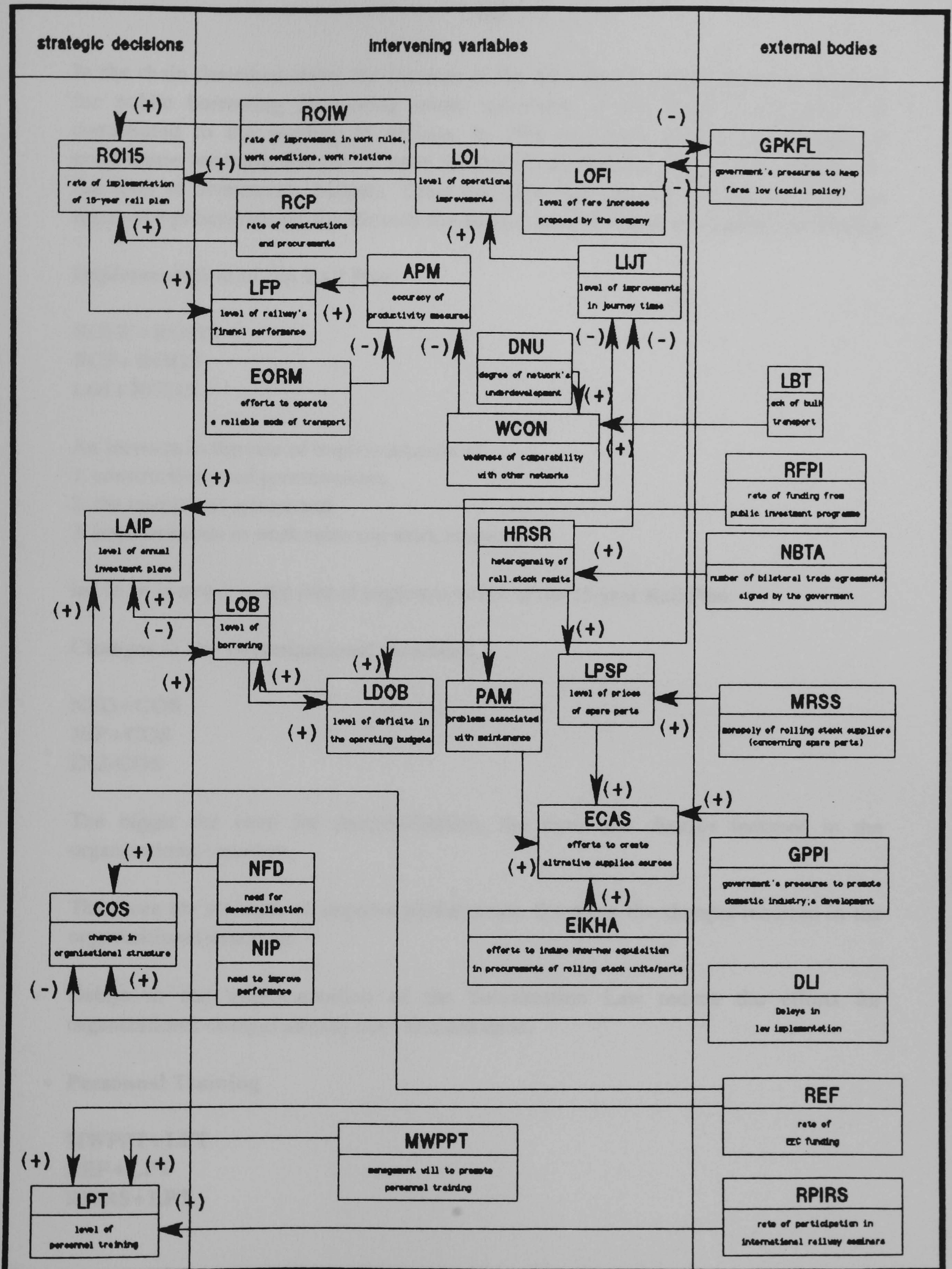


Figure 6.8: Strategist 8 (Head of the Department of Planning)
Influence Diagram of Strategic Decisions

In the chain described above the increase of the enterprise's deficit increased the need for public borrowing (borrowing under guarantee of the Bank of Greece) and contributed to the swelling of deficits. In 1986 and later, under the stabilization programme, emphasis was placed upon the deficits control and this led to a reduction in the level of investments budgets. There are data that advocate for the fact that this restrictive policy reduced significantly the deficits level as well as the need for borrowing.

Implementation of the Rail Plan

ROIW + ROI15

RCP + ROI15

LOI + ROI15

An increase in the rate of implementation of

1. constructions and procurements,
2. the operations system and
3. improvements in work rules and work relations

led to an increase in the rate of implementation of the 15-year Rail Plan.

Changes in the Organizational Structure

NFD + COS

NIP + COS

DLI-COS

The bigger the need for decentralization, the more the changes incurred in the organizational structure.

The more the attempts to improve performance, the more the changes incurred in the organizational structure.

Delays in the implementation of the Socialization Law reduce the efforts for organizational changes already been decided upon.

Personnel Training

MWPPT + LPT

REF + LPT

RPIRS + LPT

Increases in the rate of EEC funding, management's interest in personnel training and participation in international meetings enhance the rate of personnel training.

6.3.10.3. Conclusions

The concept of strategy as expressed by Strategist 8 can be delineated by the following terms:

Acquisition of financial resources is a vital issue because of the high level of deficits caused by the conformity to Government's pressures to keep fares low. Changes in the organizational structure result from a need for decentralization and improvement of company's performance and adjustment to legislation. Personnel training is very important and is positively influenced by management's will to provide employees with upgraded specialized knowledge.

The following remarks stem from the analysis of the above influence diagram:

1. There is one positive loop operating as a vicious cycle; the level of deficits in the operational budgets press upwards the level of borrowing to cover them which in turn increases the level of deficits and so on.
2. Annual investments plans, organizational structure, performance monitoring, personnel training, and the implementation of the 15-year Rail Plan are influenced-only variables; they are not articulated in chains.
3. There are no links explicitly stated between strategic decisions; horizontal links and chains are mainly identified.
4. There is an interesting line of reasoning to highlight, though it is not directly concerned with a strategic decision; the number of bilateral trade agreements signed by Government leads to an increased lack of rolling stock standardisation. Thus, repair/maintenance duties cannot be undertaken properly and, therefore, the frequent breakdowns of rolling stock units deteriorate journey times and hence the level of services offered. This, in turn, increases Government's pressures to keep fares low.
5. Suppliers of rolling stock appear for the first time in the "*external bodies*" part of the diagram.

6.4. ANALYSIS OF MATRICES

The influence diagrams revealed that certain aspects of the conceptual categories (strategic decisions, organizational factors, environmental) seemed to have been more salient to some strategists than to others. Furthermore, the strategists' assertions about what influenced a strategic decision as well as about what effects/consequences this decision had, sometimes seemed fragmented. Whether this was a limitation of the mapping technique used or could be attributed to the type of the elicitation procedure or was unknown at that time, necessitated an additional step to be undertaken.

strategist	% of strategic decisions included in the matrix
8 (Head of the Planning Dept.	100
2 (Assistant General Manager)	100
5 (Employees representative 1)	71
6 (Employees representative 2)	100
7 (Employees representative 3)	83

Figure 6.9: Identified decisions included in the matrix

Matrices including three sets of elements (strategic decisions, environmental factors, organizational factors) were constructed. Of the thirteen decisions defined as strategic by all decision-makers, ten were incorporated into the matrices. These decisions represented the percentages of the ones included in the strategic decision set of each strategist in the influence diagrams, illustrated in **Figure 6.9**.

6.4.1. On External Causes of Annual Budget's Levels

In their interviews, all strategists argued that uncertainty about financial resources caused considerable problems. The causes of this uncertainty are highlighted in **Figure**

6.10. As may be seen, there is no shared perception about what strongly affects budget's levels.

Furthermore, while in some causes like economic policy there is a partial agreement, the sign of the influence is perceived differently. Total agreement was found only in the pricing policy cause, though the magnitude of the influence varied considerably within the employees' group, while the managers expressed exactly the same views. The employees' representatives stressed the budget's truncation regarding capital investment levels, whereas the director of planning recognized its positive impact regarding the increasing revenue due to increasing tariffs. Regarding the impact of policies of various administrative bodies, the second widest agreement was recorded though this is not reflected on the magnitude of influence as well.

CAUSAL CONCEPTS	STRATEGIST 8	STRATEGIST 2	STRATEGIST 5	STRATEGIST 6	STRATEGIST 7
PRICING POLICY	positive (3)	positive (3)	positive (3)	positive (1)	positive (2)
EMPLOYMENT MAINTENANCE	positive (3)		positive (1)		positive (2)
ECONOMIC POLICY	positive (3)	positive (1)	negative(-3)	positive (1)	negative(-3)
ADMINISTRATIVE HETEROGENEITY		negative(-1)		positive (1)	
PROBLEMS WITH SUPPLIERS		negative(-1)		negative(-2)	
EMPLOYEES PARTICIPATION IN D-M		negative(-1)	positive (1)		positive (1)
BILATERAL TRADE AGREEMENTS	positive (2)			positive (2)	
POLICIES INCOMPATIBILITY	negative(-2)		negative(-2)	negative(-1)	negative(-3)

Figure 6.10: Direct Effects of Concepts on Annual Budget

6.4.2. On External Causes of Rail Plan Implementation

As displayed in **Figure 6.11**, the impact of economic policy on the plan's implementation was perceived in the same way by all Board-members, although there were striking differences regarding the magnitude of its influence. The same applies to the influence of administrative heterogeneity, problems with suppliers, and policies' incompatibility, though the recorded agreement was slightly less. The employees' participation in decision-making deserves some attention, since managers were either neutral or stressed its negative impact. However, all employees' representatives assessed this influence to be positive, though its low magnitude is notable.

CAUSAL CONCEPTS	STRATEGIST 8	STRATEGIST 2	STRATEGIST 5	STRATEGIST 6	STRATEGIST 7
ECONOMIC POLICY	negative(-3)	negative(-3)	negative(-1)	negative(-1)	negative(-3)
ADMINISTRATIVE HETEROGENEITY	negative(-1)	negative(-2)		negative(-3)	negative(-3)
PROBLEMS WITH SUPPLIERS	negative(-1)		negative(-1)	negative(-2)	negative(-3)
EMPLOYEES PARTICIPATION IN D-M		negative(-1)	positive (1)	positive (1)	positive (1)
BILATERAL TRADE AGREEMENTS			positive (1)	positive (1)	negative(-2)
POLICIES INCOMPATIBILITY	negative(-2)		negative(-2)	negative(-1)	negative(-3)

Figure 6.11: Direct Effects of External Concepts on the Rail Plan

6.4.3. On Organizational Causes of Rail Plan Implementation

CAUSAL CONCEPTS	STRATEGIST 8	STRATEGIST 2	STRATEGIST 5	STRATEGIST 6	STRATEGIST 7
BUREAUCRATIC PHENOMENA	negative(-1)	negative(-1)		negative(-2)	negative(-2)
DECISION MAKING SYSTEM		negative(-1)	negative(-1)	positive (1)	negative(-2)
MANAGEMENT SYSTEM	positive (2)	negative(-1)		positive (1)	negative(-2)
TASK DESIGN				positive (1)	negative(-1)
CORPORATE CULTURE					positive (1)
COMPENSATION SYSTEM				positive (1)	positive (1)
CAREERS DEVELOPMENT SYSTEM				positive (1)	negative(-2)

Figure 6.12: Direct Effects of Organizational Concepts on Plan

It is apparent that this area is sensitive for some of the employees and managers as well. The "*neutral*" concept of bureaucratic phenomena was mostly perceived to affect negatively the plan, as illustrated in **Figure 6.12**. All other concepts belonging to the organizational sector were not mentioned at all by managers. Only one of them referred to the negative influence of the decision-making system (the same issue also appeared in his influence diagram). Yet, here he did not prefer to score on the corporate culture cause, despite the fact that in his influence diagram he referred to the low level of organisational belief in the success of the Plan.

6.4.4. On Organizational Causes of Performance Monitoring

Figure 6.13 shows that control issues were either left unattended or partially followed. The negative impact of corporate culture and management system was stressed by one manager, whereas exactly the opposite was perceived by the other. Employees seemed unwilling to score on organisational causes. However, when they did so, the causes they attributed resembled the ones depicted in the influence diagrams and had the same negative sign. In Strategist's 6 rationale, the positive impact of corporate culture is notable; it was also defined in his influence diagrams, however as not impacting on performance monitoring.

CAUSAL CONCEPTS	STRATEGIST 8	STRATEGIST 2	STRATEGIST 5	STRATEGIST 6	STRATEGIST 7
BUREAUCRATIC PHENOMENA	negative(-1)			negative(-2)	
DECISION MAKING SYSTEM			negative(-1)	negative(-1)	
MANAGEMENT SYSTEM	positive (3)	negative(-1)	positive (1)	negative(-1)	
CORPORATE CULTURE	positive (2)	negative(-2)		positive (1)	
CAREERS DEVELOPMENT SYSTEM	positive (3)				

Figure 6.13: Direct Effects of Concepts on Performance Monitoring

6.4.5. On Organizational Causes of Structure's Inefficiency

The only identified shared perception (**Figure 6.14**) concerns bureaucratic phenomena, having a negative influence on the structure. Note here the divided views (in terms of sign and magnitude) concerning the impact of the management system, and the identity

of views of the Assistant General Manager, with respect to his influence diagram. He stressed the negative impact of corporate culture on the functioning of the organisational structure; however, the perceived strength was low.

CAUSAL CONCEPTS	STRATEGIST 8	STRATEGIST 2	STRATEGIST 5	STRATEGIST 6	STRATEGIST 7
BUREAUCRATIC PHENOMENA	negative(-2)		negative(-3)	negative(-2)	negative(-2)
DECISION MAKING SYSTEM	positive (3)			negative(-1)	negative(-2)
MANAGEMENT SYSTEM	positive (3)		positive (1)	negative(-1)	negative(-2)
CORPORATE CULTURE		negative(-1)			negative(-2)

Figure 6.14: Direct Effects of Concepts on Organiz.Structure

6.4.6. Inter-relationships Among Strategic Decisions

CAUSAL CONCEPTS	STRATEGIST 8	STRATEGIST 2	STRATEGIST 5	STRATEGIST 6	STRATEGIST 7
RAIL PLAN	positive	positive			
294 CONTRACT		positive			
MODERNIZATION PROJECTS		positive		positive	
ANNUAL BUDGET					positive
ORGANIZATIONAL STRUCTURE			positive	positive	
ROLLING STOCK ACQUISITION				positive	
PERSONNEL TRAINING				positive	

Figure 6.15: Impact of Performance Monitoring on Strat.Decisions

CAUSAL CONCEPTS	STRATEGIST 8	STRATEGIST 2	STRATEGIST 5	STRATEGIST 6	STRATEGIST 7
MODERNIZATION PROJECTS	positive	positive	positive		positive
RAIL PLAN	positive				positive
294 CONTRACT	positive				positive
ROLLING STOCK ACQUISITION	positive				

Figure 6.16: Impact of Annual Budget on Strategic Decisions

An area that was unexplored in the influence diagrams was the investigation of the inter-relationships among strategic decisions. **Figures 6.15 and 6.16** detect the impact of the annual budget on strategic decisions and of performance monitoring on strategic decisions (only the strong relationships are included; that is only relationships that have values 2 and 3). Thus, concerning the impact of performance monitoring, this impact was perceived as strong, concerning the Rail Plan, by both managers; however, employees' representatives did not perceive strong influence; to them, organisational structure was the factor positively affected by performance monitoring.

Referring to the impact of the annual budget, only a strong view concerning modernization projects was revealed. All other strategic decision-areas either were not mentioned or the perceived strength was weak. This finding coincides with the definition of annual budgets as a strategic decision and its minimal implications depicted in the influence diagrams.

6.5. SYNOPSIS

This chapter dealt with the revealing of strategists cognitive structures operationalizing strategy. Influence diagrams and matrices were used to depict these structures. The following derived from the analysis of those structures illustrated in influence diagrams:

- A newcomer (the new General Manager) adopts a positive perspective in terms of strategy. Most of his concepts are located in the environment which influences strategic decisions and is, in turn, influenced by them. Strategic decisions concern mainly the regulated areas of financing and fares structure. From this one may infer that he sees strategy as mainly altering the existing constraining regulatory framework, as something

that should be done at another level than that of the firm, in order to ensure survival of the firm and benefits to the interested parties.

- Managers perceive strategy mainly in terms of organizational concepts. Yet, these are included in negative chains where the influencing element is either government or the institutional framework. In turn, strategy mostly influences organizational areas and in some cases does not impact on any factor.

- There are cognitive maps that mostly belong to outsiders (governmental officials) which display a bulk of direct links between the environment and strategy. These links are perceived, in many cases, as having an equivocal impact (that is, negative and positive signs). Organizational factors are rarely present.

- Other insiders (not managers) operationalize strategy in different terms. Some of them display cognitive structures where strategy is negatively influenced by the environment and, in turn, negatively influences the organization. In this category, effects of strategy are few. It seems as strategy (apart from the areas related to personnel training and hiring) is exclusively denoted by the negative consequences of regulatory policies. Others include into their cognitive structures mostly negative links that initiate from the organization. When concepts located in the environment are also found, there is no connectivity between them and the organizational ones. Here again strategy is defined by the negative consequences not only of government's actions but of organizational activities as well.

The cognitive maps derived from matrices, compared to the influence diagrams presented similarities as well as differences.

- The similarities concerned the negative impact of the external environment where the government was the prevailing factor for the implementation of the Rail Plan. The same also applied to the impact of financing on the modernization projects.

- The differences concerned the case of the employees' representatives, that filled scores concerning the organizational causes of performance monitoring and organizational structure in an idiosyncratic function (apart from one case which exhibited consistency), where the perceived values were low. The managers exhibited striking differences between them on causes of performance monitoring, while on causes of organizational structure one of them perceived strong positive impact and the other perceived no relationship at all.

Thus, in terms of a first assessment, the strategists' cognitive structures presented both similarities and differences, both in terms of the concepts belonging in their chains of reasoning and in terms of the influence that strategic decisions were perceived to exert or sustain. Yet, in order to evaluate whether these surfaced differences possess consistencies, a further step in the analysis was undertaken and is dealt with in the following chapter.

CHAPTER 7

EXPLAINING INDIVIDUALS' DATA: LOOKING FOR PATTERNS

7.1. INTRODUCTION

Chapter 6 presented the strategists' maps at the individual level and depicted the structure of the causal assertions used to rationalize about strategic decisions. This chapter is concerned with tracing patterns across maps, both influence diagrams and those derived from matrices, in order to uncover similarities and spot differences.

The aim here is (1) To embed the individuals' notion of strategy in context by drawing on personal, professional and other characteristics; and (2) To present a deeper understanding of these notions by looking into patterns in their structural configuration and into the perspective they conveyed. Thus, in terms of the research objective, the question of how the members of a Board operationalize strategy would be tackled.

7.2. EXPLAINING INDIVIDUAL DATA IN CONTEXT

To describe what strategists think about strategy, the chains of reasoning depicted in the influence diagrams were used, as well as the cause-effect relationships derived from the matrices. The following section combines these two data sources and illustrates a first attempt to go deeper from the stated rationales to the hidden assumptions behind them and to understand why some very important issues to some strategists were ignored by other.

7.2.1. Strategist 1: The General Manager

A 45 years old Mechanical/Electrical Engineer (BSc, MSc, PhD), Assistant Professor at the School of Electrical Engineering of the National Technical

University of Athens (NTUA), he was appointed as General Manager of the Greek Railway in August 1988. He first joined the railway after the 1981 elections as vice-governor, a post he left in 1983 to take over Olympic Airways as General Manager. Two years later he joined Pyrkal, a state-owned industry producing army supplies, as General Manager.

When he first joined the railway he set up two committees to re-evaluate the Rail Plan and propose required amendments. The outcome of the work of the first committee (strategic planning group) was the 5-Year Rail Plan discussed in this study, whereas the second committee (tactical planning group) never succeeded in producing a concrete result.

When he joined the railway for second time in 1988, he assigned a first priority to the task of assuring a continuous funding of the railway development plan, in order to complete at least the developing engineering projects on the Athens to Idomeni main line. He managed to have his proposals approved by the European Commission, as discussed in **Appendix B**. He also initiated changes in the organizational structure of the enterprise and was the first to stress the service character of the railway, as contrasted to the up to that time emphasis on engineering projects.

He left the railway in June 1989, following the change in Government.

An *extroverted/persuasive* view best describes the General Manager's definition of strategy. The majority of concepts he used lay in the environmental sector and referred to the positive repercussions that railway development, through the implementation of the Plan, would have on different aspects of the environment. His chains of reasoning either initiated from or concluded to this sector. His rationale concerning annual budget and the fare structure was a radical one, because it promoted greater autonomy of the public enterprise from the State and brought to its defense the tax-payers who should not be burdened by costs of services offered to the users. Related to this was the concept of quality of service which was emphasized throughout the interview, though not directly related to strategic decisions in the influence diagram. According to his view, the users of rail services would be willing to pay increased fares for improved services and thus the enterprise would be able to reduce its big deficits. Quality of service (not as the ultimate end of the rail plan but as a daily practice including the transformation of existing services to meet the passengers' needs) was, according to his view, the means to counteract governmental views claiming that there was no need to invest heavily on railway development since the services offered by the company were appropriate for the income classes to which they were directed.

He considered the divestment from time- and effort-consuming activities as a short-term task the accomplishment of which would be facilitated by the implementation of the 294/83 manufacturing contract. This contract would provide domestic industry with know-how and technology, thus making it capable of undertaking the biggest part of rolling stock periodic maintenance and repair duties.

Overall, strategy in the General Manager's terms implied a completely new repositioning of the firm which would necessitate both the State's new attitude towards railways and the enterprise's new perspective of its services. However, what was missing from this motivating view was a description of the means to get there, that is the organizational systems, processes and values which by being rigid (because of the years of stagnation and despair) would probably, at least in the beginning, resist change and condemn it to failure.

7.2.2. Strategist 2: The Assistant General Manager

A 50 years old Civil Engineer working for the Greek Railway since 1965, he was appointed as Assistant General Manager in 1986. He was responsible for the Permanent Way function of the enterprise, that is maintenance and development of track, track infrastructure, signalling and telecommunications. He spent a big part of his career in the railway as an Area Engineer, before becoming Regional Chief Civil Engineer and then Chief Civil Engineer of the Permanent Way Department. Being a career railwayman, he had during the study the rank of the Head-of-Department and was considered within the enterprise as an expert in permanent way engineering and as a very loyal and dedicated employee. Since 1989, that is after the change in Government, he is not an Assistant General Manager any more. In some way, he has been placed aside, because he is not assigned any duties within the existing organizational structure.

The Assistant General Manager provided an *integrated* view of strategy. The main issue was government's funding without which there was no future for the enterprise. The bulk of his concepts was rooted in the organizational sector. In the environmental sector, the government and the supervisory board were both identified as constraints to internal decisions. He was concerned with organizational weaknesses (e.g. the need for intensive personnel training and the lack of incentives for career development since the existing system exhibited distortive phenomena) and articulated the need for the overcoming of these weaknesses into his concept of strategy. Both his influence diagram and score matrix pin-pointed to the strong negative impact that the corporate culture (organizational disbelief in success) had on performance monitoring and on the personnel's capability to plan.

He assumed that the concentration of the bulk of decision-making on the top of the hierarchy was deteriorating organizational performance and that the actual management system was falling short of activating the decision-making system throughout the enterprise. He also associated the problematic organizational structure with this deficiency and stressed that the introduction of the supervisory board had amplified problems of managerial accountability. He believed that the new structure (at that time starting to be implemented) would lift some of these constraints. Surprisingly enough, though he criticized the ineffectiveness of the supervisory board and believed that this would increase the scepticism concerning participative schemes, he included this board's functioning into his concept of strategy. Whether this may be attributed to his faith in the ultimate success of such schemes or to his belief that only the stakeholders' interests and pressures could help the railway to survive, was not clear. However, his reasoning revealed that this might come true if and only if all constituents were capable to understand what the railway's mission is and to work for this mission's accomplishment.

7.2.3. Strategist 3: Governmental Representative 1

A 52 years old civil engineer, engaged in private constructions and engineering studies. In the past, he has been a lecturer in the National Technical University of Athens (NTUA) in the field of Theoretical and Applied Mechanics. He has also been a member of the Board of the National Union of Civil Engineers and a member of the top management team of the Technical Chamber of Greece (TEE). He was appointed by the new government in 1982 as a member of the Board of the Railways and he held the post of the vice-chairman of the Board until the Government's change in June 1989, when he had to leave the Railway.

The Vice-Chairman's view of strategy can be described as *integrated/compliant*. All strategic decisions were influenced by external factors mostly directly and they covered all major areas of organizational activities. He considered the issue of control as related only with the top; that is, the ineffectiveness of the supervisory board had essentially left the enterprise without auditing; he did not mention the control exercised by this Board on the enterprise, unless he implicitly recognized that the lack of the first link inevitably results in the lack of the second. The existence of two opposing influences on organizational structure and pricing policy depicted the forces in action at that time when the enterprise was trying to establish a new way of doing its business, and to persuade the Government that after the quality of service had improved (at least in terms of speed increases) it was time for fares also to increase.

The absence of any perceived effects after the decisions had been made might indicate either ignorance concerning their consequences (since the decisions had already started being implemented 5-6 months earlier) or acceptance of the fact that since such external constraints existed, nothing more could be done in order to overcome obstacles.

7.2.4. Strategist 4: Governmental Representative 2

A 40 years old economist, working for the state-owned Industrial Development Bank of Greece (ETVA), she participated in the Public Enterprises Control Committee (DEKO) at the Department of National Economy, and was appointed as member of the Board of the railways, in September 1985, following the establishment of the new Board (participated by employees representatives) during the period of the implementation of the Governmental strict economic policy. She rather acted within the Board as a representative of the mentioned Governmental Committee, attempting to co-ordinate and control rail policies within the framework established by the Department of National Economy. She too left the Railway in June 1989 and went back to her first job at the Industrial Development bank.

Her views concerning strategy could be described as *official/formal*. The enterprise seemed totally unknown to her. Her views rather implied directives than cause and effect relationships. The issue of control was only related to deviations, appearing in quarterly accounts submitted by the enterprise to the government. It was not demonstrated whether the identification of such deviations initiated corrective activity either by the enterprise or the government. Though the negative impact of governmental sectors was recognized, (for example the Department's of Commerce impact on both rolling stock acquisition and pricing policy), she did not mention any effects or consequences for the enterprise.

7.2.5. Strategist 5: Employees Representative 1

A 60 years old permanent way technician and trade-unionist was one of the three employees elected to the Board by the company's personnel after the implementation of the socialization law (September 1985). He was the first of the two representatives elected under the flag of the governing party (socialists). However, he was not elected to that post during the first elections (April 1985), when he was elected as an employees' representative in the Supervisory Board (ASKE) of which he was the chairman until 1988. After the expiration of the three-years term of the employees representatives (1988) he was elected as a member of the Board and still holds this post (his term expires in Autumn 1991). During the last ten years before his

appointment at the Board, he was working as a permanent way technician in the P.W. Division of the Athens Regional Department (DPA).

He viewed strategy as an *integrated/“keep off the edges”* concept. Apart from the need to acquire new rolling stock units and to update the railway line, he considered that strong negative influences were stemming from problems with suppliers (of services and rolling stock) and their negative effects upon the Rail Plan.

Environmental factors and organizational ones were assumed to strongly affect strategic decisions. The management and decision-making systems had a negative impact upon all strategic areas. On the other hand, when the impact of organizational factors on the organization was considered, apart from the bureaucratic phenomena all other concepts displayed positive inter-relationships. Corporate culture rendered ineffective the functioning of the organizational structure. The latter, according to his view, was perfectly acceptable in its previous form and there was no need for a major change; it would suffice to remove constraints such as structural/functional deficiencies of the supervisory board and the vagueness of objectives as provided by the State. Trade unions were assumed to contribute positively to performance monitoring, though the actual experience of employees' participation in decision centres proved that their impact was marginally positive. Finally, he stressed the need for more specialized and well-compensated personnel to be hired, since the actual impact of the compensation system upon all strategic decisions was minimal.

7.2.6. Strategist 6: Employees Representative 2

A 35 years old member of the clerical staff, he joined the railway in 1978 and used to work at the headquarters of the North Greece Regional Department (DPTh). He was also elected to the Board by the employees under the flag of the socialist party, both for the first (1985) and the second (1988) term. An active trade-unionist, he had also been elected to the leadership of the Federation of Greek Railwaymen (POS). He still retains his post at the Board; his term expires in Autumn 1991.

He viewed strategy as an *integrated/unionistic* concept. Strategy contained all major areas of organizational activities and displayed linkages between some of them. He stressed constraints stemming from the organizational and the environmental (the majority of strong influences) sectors that affected negatively the strategic areas. However, though he recognized the organizational weaknesses (inadequacy of the Procurement Department, poor quality of technical studies, lack of will to solve the rolling stock problem), he argued about the strong positive influence of employees participation in decision centres upon all organizational factors such as the decision

making system, the task design system, the career development system. Furthermore, he argued about the strong positive impact of the supervisory board's functioning upon the majority of strategic decisions and the culture of the company, whereas in his influence diagram he pin-pointed to the negative impact of inexperienced employees participating in the supervisory board's functioning. He seemed to attribute the causes of organizational ineffectiveness mainly to the enterprise's top management, even though, in his matrix, he assigned low but positive values to the impact of the actual management system on task design, corporate culture, compensation system and career development system. Personnel training was a contradictory concept in his reasoning. He perceived a strong positive impact on the technical aspect of modernization projects and rolling stock acquisition as well as on task design, corporate culture, and career development system (how then do the incompetent managers find their way up the organizational hierarchy?). Yet, he perceived a marginal impact on the employees participation in decision centres. This might imply that other criteria applied for the election to these posts.

7.2.7. Strategist 7: Employees Representative 3

A 38 years old mechanical and electrical engineer, he joined the railway in 1978 and had mainly served within the road vehicles division of the company (YA). He was elected as a representative of the employees affiliated to the party of the opposition (conservatives) both in 1985 and in 1988. Before his election, he had been an active unionist within the Professional Engineers trade-union. His term too expires in Autumn 1991. However, after the political change in 1989, being an employees representative to the Board he was assigned the post of the acting General Manager of the enterprise which he still retains.

He viewed strategy as a *resource dependent/politically constrained* concept. Apart from the need to acquire the means of production for the offering of railway services (such as modernized line, new rolling stock and specialized labour), which need was strongly stressed because of the network's under-development, he considered administrative controls and problems with suppliers as the external factors that strongly influenced negatively the development of the Rail Plan and the progress of the 294/83 contract.

Interestingly enough, he perceived all strategic decisions to affect positively all organizational factors, particularly the organizational structure that had the stronger perceived impact. This opposed to his view expressed in the influence diagram, i.e. that the until 1988 General Manager blocked the delegation system and thus led to deficiencies in the organizational structure. The new organizational structure was

starting being implemented at that time; hence, its perceived impact upon the organization was minimal. Consequently, his views referred mostly to the existing one. The focus on this issue, in his influence diagram, might be attributed to political opposition. The same applies to the career development system. He perceived the autocratic leadership of the ex-General Manager as one of the causes of this system's ineffectiveness. In his matrix a very low negative impact was perceived, while the positive impact of the organizational structure was again identified.

7.2.8. Strategist 8: The Head of the Department of Planning

A 60 years old civil engineer, he joined the railway in 1963 and has almost exclusively worked within the Department of Planning and Organization, either as a junior engineer, or as a Chief Civil Engineer, or recently (since 1988) as the Head of the Department. He was one of the group of engineers which worked with Sofrerail during its extended consultancy in Greece (1966-1977) and thus, in many respects, he must be held accountable for a big part of either the success or failure of the railway's Planning Department since its establishment (1970). He is retiring in 1993.

His views might characterize strategy as an *externally induced/helpless-and-hopeless* concept. Environment burdens organization by either limiting budgets or by keeping fares low as a punishment to the enterprise, which is not capable of promoting the quality of services. The bad financial position of the railway is part of a vicious cycle and there is not a counteracting force to release the situation. The complex chains of reasoning regarding rolling stock reliability and consequently service reliability seemed themselves to contribute negatively to the company's financial performance. Organizational structure, he argued, was affected by delays in the implementation of the law and by the need to improve performance, while in his cognitive map, deriving from the matrix, structure was perceived to affect positively performance monitoring and all organizational systems (apart from the compensation one).

Eventhough, in the interview, he stressed the fact that the supervisory board could not fulfil its mission and wondered whether this was due to the members' indifference in defining a transport policy for the company within an integrated national transport system, in the matrix he scored strong positive values on the effects of the functioning of the supervisory board upon all strategic decisions as well as upon the management and decision-making systems of the company, probably this reflecting an ideal situation (or a *"would if"* statement).

He considered that the management and decision-making systems contributed positively to corporate culture and career development system, the latter being also positively and

strongly affected by all organizational areas (apart from the existence of bureaucratic phenomena). It seemed strange that such a well-managed, controlled and democratic organization (positive influence of strategic decisions upon organization as well as organizational factors on organizational ones) could not find its *"way out of the tunnel"*.

7.3. PATTERNS

This section aims at identifying: (1) patterns in the structural configuration of influence diagrams, and (2) the perspective conveyed by the notion "strategic", based on the positioning of strategy concepts in the chains of reasoning as well as on the links among them.

7.3.1. Patterns in Structural Configuration of Influence Diagrams

Figure 7.1 shows the patterns revealed in the strategists' individual maps (influence diagrams). As demonstrated in **Chapter 4**, the six categories on the left-hand side of the table refer to the structure of the maps, the number, type and distribution of the cognitive elements involved and the type of their interrelationships. For each strategist, the issues involved by category were sorted and then presented in the appropriate columns of the right-hand side of the table.

- The first category includes the total number of concepts belonging to the environmental sector and its distribution according to sub-categories emerging from the data.
- The second category refers to concepts pertaining to organisational issues. These issues were also divided into sub-categories emerging from the data.
- The third category indicates the total number of strategic decisions .
- The fourth category denotes the strategic decisions found in horizontal chains, that is chains of concepts cutting across the three sectors illustrated in the maps (environment, organization, strategy).
- The fifth category refers to the vertical links/chains found in the strategy sector of the influence diagrams. Thus, they involve only strategic decisions.
- Finally, the sixth category refers to the number of cycles (loops) identified in all sectors of the diagrams.

c o n c e p t s	General Manager	Assistant General Manager	Government Representative	Government Representative	Employees Representative	Employees Representative	Employees Representative	Head of Planning Department
concepts in the environ.sector (no)	10	9	8	5	11	7	4	9
distribution								
Government	30 %	56 %	38 %	100 %	36 %	43 %	100 %	56 %
Trade Unions		11 %	12 %		9 %			
Supervisory Board		33 %	25 %		28 %	29 %		
Public Sector			13 %			14 %		
Suppliers	10 %				18 %	14 %		11 %
Competitors	10 %							
Users	10 %							
General Public	20 %							
EEC	10 %		12 %					11 %
Conferences								11 %
Freight Market								11 %
other	10 %				9 %			
concepts in the organis.sector (no)	8	14	9	3	13	15	15	20
distribution								
Financ.Management	25 %	22 %	22 %	33 %	15 %		7 %	9 %
Structure/Processes	38 %	50 %	22 %		46 %	47 %	67 %	28 %
Corporate Culture	12 %	7 %						
Corporate Image	12 %				8 %			5 %
Divestment	13 %				8 %			
Rewards/Incentives		14 %	22 %		15 %			
Communication		7 %						
Operatns Management			22 %			13 %		33 %
Rules/Regulations			12 %				13 %	5 %
Human Resources				33 %	13 %			
Organis.Development				34 %			13 %	
Equip.Acquisition					8 %	27 %		10 %
Number of Strategic Decisions	4	7	9	5	7	7	6	4
Strategic Decisions in Horizontal Chains	100 %	71 %	78 %	80 %	100 %	86 %	100 %	100 %
Strategic Decisions in Vertical Chains	-	87 %	67 %	40 %	-	57 %	-	-
Number of Cycles	none	none	none	none	none	none	none	two

Figure 7.1: Patterns in the Diagrams' Structural Configuration

The **General Manager's** concepts about the environment fell into six sub-categories. 30% of the concepts were directly related to Governmental issues while concepts pertaining to suppliers, competitors, users and the European Community contributed with the same value (10%). The General Public was second in overall importance (20%), whereas some concepts such as the quality of mass transport in the country were classified as "*other*" and represented the 10% of the overall environmental category.

Organizational issues involving eight concepts in the General Manager's maps were second in overall importance. Structures and processes represented the largest sub-category in this category, followed by financial management issues. All other issues (corporate culture, corporate image, and divestment from activities) received equal attention.

The **General Manager's** whole set of strategic decisions were included into horizontal chains linking concepts from the environment and the organization in two-way links. No vertical links were identified among strategic decisions. This analysis showed that environment had a slight importance in his definition of strategy and much diversity (seven sub-categories involved), while the importance of the concept of the "*general public*" indicated his will to "*create new allies*" in the name of the advantages that a public profitable enterprise would offer to the wider community, apart from the low fares to certain users. The General Manager divided his concepts equally between the organization and the environment. Though strategic decisions were partly articulated, it was difficult to trace a consistent pattern. What could be said, is that his concepts revealed a "*creative balance*" expressed in both the variety of the environmental sub-category and the innovative content of the organizational ones. The inclusion of the strategy concepts into only horizontal chains probably indicated his efforts to shape important issues by drawing on new and diverse environmental and organizational concepts.

The **Assistant General Manager's** concepts about the environment fell into three sub-categories. Governmental issues came first, with a 56% of the total concepts in this sector. Assessing the functioning of the Supervisory Board, he generated concepts which represented the 33% in this category, while the activities of the trade unions represented another 11%.

Organizational dimensions were of greater importance. Structures and processes clearly dominated this category and attracted 50% of the concepts involved. Rewards issues attracted a 14%, while financial matters reached a 22%. Corporate culture issues and issues of power based on specialized knowledge each attracted 7% of the total concepts.

71% of the Assistant General Manager's strategic decisions were included in horizontal chains while 57% were linked with vertical links. From the classification offered it can be said that the Assistant General Manager's diagram was mostly centred on the organizational sector, while the notion of strategy was included in horizontal and vertical chains. This indicated that, holding certain conditions, the organization could trigger off strategic change by following a sequence of actions. His view may be described as an *"analytical"* one.

The **First Government Representative's** concepts about the environment generated five sub-categories. Governmental issues stood for 38% of this category, while the stakeholders' activities attracted a 25%. Trade Unions, other public sector firms, and EEC policies accounted almost for 13% of the total of concepts within this category.

Sorting concepts in the organizational category generated five sub-categories. Financial matters, rewards and incentives, structures and processes, and operations management received the same attention which accounted for 22 % of the total, in each case. Rules and regulations attracted 12%.

Strategy concepts were mostly (78%) incorporated into horizontal chains, but a quite high percentage (67%) referred to strategy concepts involved in vertical links. The pattern revealed by this analysis may be described as *"methodical"*. The division of concepts among categories of equal importance as well as the existence of sub-categories which accommodated almost the same amount of concepts led to this definition. The existence of a quite high percentage of horizontal and vertical chains further advocated for this.

The classification of the **Second Government Representative's** concepts about the environment generated only one category. All concepts (100%) referred directly to the Government's discretion to inaugurate policies, impose restrictions, or control, through various administrative bodies, the firm's activities.

Organizational issues generated three sub-categories of equal importance. Financial management, acquisition of human resources, and the organizational need for development were equally important, each with a 33% percentage. The very limited number of concepts involved in the categories is characteristic and worth accounting for in the concluding part of this chapter.

Strategic decisions were mostly included into horizontal chains (80%). 40% of these decisions were also linked with vertical links. It was difficult to find a consistent pattern because the analysis suffered from a lack of concepts. However, it should be stressed that polarisation and poverty best describes the pattern of this strategist.

The classification of the **First Employees Representative's** concepts created four sub-categories in the environmental category. Thus, governmental issues concerned the 36% of the total of concepts involved. Supervisory Board's issues were second in overall importance (28%), while other issues (trade unions, etc.) received the same attention (9%).

The organizational category revealed six sub-categories. Structures and processes accounted for 46% in this category. Financial management and rewards and incentives were of equal importance (15%). Corporate image, having the meaning of the development of a company prepared to compete efficiently and effectively in the transport market, accounted for 8%. The same percentage was attracted by equipment acquisition, and divestment from activities.

Strategy concepts were all included (100%) in horizontal chains. No vertical links were traced. It could be said that the pattern revealed was mostly centred on the organizational sector, partly articulated, and characterised by the predominance of structures and processes as well as the rolling stock acquisition. It bore a great resemblance with the pattern revealed in the Assistant General Manager's map as far as environmental sub-categories and the importance of some of the organizational ones were concerned.

The **Second Employees Representative** also centred his interest on the organizational category. In the environmental one, the concepts involved were classified into four sub-categories. Government's issues represented the largest sub-category with 43%, while Supervisory Board, other public sector firms, and suppliers attracted respectively 29%, 14% and 14%.

In the organizational category, the leading sub-category referred to structures and processes with 47% of the concepts. Next came the acquisition of resources, both permanent way construction and acquisition of rolling stock, with 27%. Employees (13%) and operations (13%) made for the balance.

Most of the strategy elements were articulated in horizontal chains (86%). A significant part of strategic decisions was also included in vertical links (57%). The pattern identified can be described as centred on the organizational sector and quite balanced, with great emphasis placed on structures and processes as well as on the acquisition of resources. The lack of considering financial matters should be noted.

The concepts about the environment of the **Third Employees Representative** were classified into one single category, that is the Government policies, practices, and legislation, which attracted 100% of his concepts in this area.

In the organizational category, four sub-categories were created to accommodate the 15 concepts involved. Structures and processes represented the largest sub-category with 67%. Rules and regulations, and corporate image followed, each with 13%. Finally, financial matters attracted 7% of the concepts identified.

All the strategy elements were included in horizontal chains. There were no vertical links between the elements involved. The pattern identified can be described as polarised, organisationally centred, and partly articulated, since strategy elements were not linked at all.

The influence diagram of the **Head of the Planning Department** generated nine concepts falling into the environmental category. Of those, 56% were directly referring to governmental issues, while concepts related to suppliers of spares and rolling stock, the European Community, the freight market, and international conferences were of equal importance and each accounted for 11% of the total concepts involved.

The organizational category was divided into six sub-categories. Operations management (pricing, accounting, operating) was of greater importance with 33% of the concepts mentioned. Next came structures and processes with 29% and third, with equal importance, financial matters, and acquisition of resources, with 10% each. Corporate image, and work rules and conditions represented each a 5% of the total concepts involved in this category.

Strategy elements were all included in horizontal chains (100%). No vertical links were present in the diagram. The pattern revealed may be described as mostly organisationally centred and partly articulated, with operations management, and structures and processes attracting the larger importance.

To summarize, the eight strategists presented certain similarities in patterns concerning structural properties of their influence diagrams. Thus, for those who placed the bulk of concepts in the organizational category, structures and processes played the most important role, whereas for those that presented more balanced categories (that is, environment and organization generated almost the same number of concepts) the organizational sub-categories tended to be, in most cases, of equal importance.

In terms of the research objectives, the strategists' rationalizations exhibited the following characteristics:

1. Government's importance (in terms of the concepts involved referring to it) was great, in all rationales. Managers especially, shared the same scheme with others (one employee representative, one governmental official) and defined all concepts in this area in terms of government's powers and/or policies. This finding differs from the findings of other studies that pointed to a governmental influence weaker and lesser than the one exerted by customers or clients (Hickson et al., 1986).

2. Systems and structure attract a large part of the interest of those who centre their notion of strategy on the organizational side. As evidenced in the maps, rationales about them reveal difficulties in assessing performance of subordinates; management selection on a non-performance basis also creates conflict between employees and managers. Control issues, as stated, indicate that most of the strategists abdicated their responsibilities (Allison, 1983; Rainey, 1989).

3. Strategic decisions in half of the cases examined were discrete and independent of one another. Thus, assumptions used to develop theoretical models which stress that strategic decisions are steps in an overall process designed to move the organization towards a goal (Bateman and Zeithaml, 1989) do not hold true, in the specific case.

7.3.2. The Perspective Revealed in the Influence Diagrams

While the previous section dealt with structural properties of the concepts involved in the influence diagrams, this section is concerned with the perspective each strategist attributed to the identified strategic decision. The aim is to investigate the ways in which actors addressed a rather open-ended management situation that had strategic implications. This could probably result in understanding the way in which actors made sense of ambiguous situations, which may ultimately lead in understanding strategic thought.

Figure 7.2 attempts to reveal the perspective given to strategy by the decision-makers. For this purpose, interpretative guide-lines referred to in **Chapter 6** were utilized. **Figure 7.2** contains on the left side the set of strategic decisions identified as such by each decision-maker.

- The first column contains a number that defines the average length of causal chains that include the strategic decisions under consideration, in order to depict whether strategic chains have same lengths that are related to specific concepts.

- Thus, strategic decisions extracted from the accounts as positively influencing-only elements (or positively-influencing elements) fall into the second column which contains the decisions seen as having positive repercussions in the environment.
- The third column includes the strategic decisions seen as ends, that is influenced-only elements in a chain (or chains) of reasoning. These chains of reasoning have either positive or negative influence on the identified end. When positive influence is depicted, then the chain of reasoning can be assessed as **condition (CD)**, whereas when negative influence is perceived the chain of reasoning can be assessed as a **constraint (CT)**.
- The fourth column contains the strategic decisions that were seen as **means** (influencing and influenced concepts in chains of reasoning).
- The fifth column is related to the previous one and contains the strategic decisions seen as means in strategy chains of reasoning, that is chains (or links) that comprise concepts belonging strictly to the strategy sector of the influence diagrams. This will highlight whether achieving one decision is instrumental to achieving another. As **McCrimmon (1988)** has stated, this concept of instrumentality, where the attainment of one goal directly contributes to the attainment of another, is very important in strategic analysis.
- Finally, the sixth column shows whether the strategic decisions depicted on the left-hand side of the table were seen as having an impact on organisational performance.

Figure 7.2 revealed that the strategists had different perspectives of strategy.

- The **General Manager's** average length of causal chains varied from 2 to 3.5. All decisions were seen as means in the causal chains and all impacted positively on the environment.
- The **Assistant General Manager's** strategic decisions fell mostly into the fourth column, seen as means when favourable conditions existed and constraints were relaxed. Two decisions were perceived as ends, namely the Rail Plan and the Supervisory Board when constraints are relieved. The average length of causal chains was in the interval 1 to 5, performance monitoring and organizational structure having the highest values, while organizational structure, personnel training and rewards system were perceived as impacting on organizational performance.
- The **First Government Representative's** average length of causal chains including strategic decisions varied between 1 and 3. Three of the decisions were seen as ends when favourable conditions hold and constraints are relaxed, while five other as means.

strategist	strategic decision	average length of causal chains	positive repercussions in the environment	decision perceived as "end"	decision perceived as "means"	decision perceived as "ends" or "means" in strategy chain	decision having impact on performance
		(1)	(2)	(3)	(4)	(5)	(6)
General Manager	<ul style="list-style-type: none"> - The Rail Plan - Fares Policy - Financial Budgeting - The 294/83 Contract 	3.5 3 3 2	yes yes yes yes		CD CD CD CD		
Assistant General Manager	<ul style="list-style-type: none"> - The Rail Plan - The Business Plan - Structure - Personnel Training - Performance Monitoring - Reward Systems - Supervisory Board 	3 1 4.5 3 5 4 4		CT CT	CD CD, CT CD CD, CT CD, CT	end means end means means	yes yes yes
Government Representative 1	<ul style="list-style-type: none"> - The Rail Plan - Modernization Projects - 294/83 Contract - Financial Budgeting - Supervisory Board - Performance Monitoring - Organizational Structure - Reward Systems - Pricing Policy 	1 1 1 1 1 3 2		CD CT CD, CT	CD CD CT CD CD, CT	end means means means end	
Government Representative 2	<ul style="list-style-type: none"> - Financial Budgeting - Modernization Projects - Performance Monitoring - Pricing Policy - Rolling Stock 	3 2.5 3 1 1		CD CD CT CD	CD, CT	means end	
Employees Representative 1	<ul style="list-style-type: none"> - The Rail Plan - Financial Budgeting - Divestment from Activities - Pricing Policy - Supervisory Board - Specialised Personnel Hiring - Personnel Training 	2 1 5 2 2 2 1	yes	CD CD CD	CT CT CT		yes
Employees Representative 2	<ul style="list-style-type: none"> - The Rail Plan - The Business Plan - Modernization Projects - Organizational Structure - Performance Monitoring - Rolling Stock Purchase - Rolling Stock Production 	2 2 2 1.5 2 1		CD CT	CD CD, CT CD, CT	end means means end	
Employees Representative 3	<ul style="list-style-type: none"> - Modernization Projects - Rolling Stock - Personnel Training - Investment Plan - Career Development System - Organizational Structure 	1 2 2 2 2.7 2.2		CD CT CT, CD	CD CT		
Head of Planning Department	<ul style="list-style-type: none"> - The Rail Plan - Investment Plan - Organizational Structure - Personnel Training 	3.2 2 1 1		CD, CT CD	CD, CT CD, CT		yes

FIGURE 1.2: The Strategy Perspective of Cognitive Maps

In his concept of strategy, decisions were linked in the way presented in the sixth column of **Figure 7.2**.

- **The Second Government Representative's** average length of chains of reasoning lied in the interval 1 to 3, the highest values being assigned to chains including budgets and performance monitoring. Four of the five decisions were perceived as ends, when mostly conditions concerning Governmental policies were holding. Only one decision (budget) was seen as means in a causal chain, while the strategy chain included two decisions: annual budget influenced modernization projects.

- **The First Employees Representative's** average length of causal chains exhibited a great dispersion. Values varied from 1 to 5, the highest values assigned to the decision related to the divestment from rolling stock maintenance and repair activities. Budgets and personnel training showed the lowest value (1). The Rail Plan was seen as impacting positively on the environment, while budgets, and personnel hiring and training were perceived as ends. Three other decisions were perceived as means when constraints were relaxed. Finally, the divestment from rolling stock activities was perceived as impacting on organizational performance.

- **The Second Employees Representative** had the shortest interval within which the average length of causal chains laid (1 to 2). Two of the strategic decisions were seen as ends, three as means, and one as having positive repercussions in the organization. The strategy chain included two separate links. The Business Plan was perceived as impacting on the Rail Plan, and the organizational structure as impacting on performance monitoring.

- **The Third Employees Representative's** average length of causal chains varied from 1 to 2.7. Most of the decisions were perceived as ends, while two (rolling stock acquisition and career development system) as means. Strategy concepts were totally inarticulated .

- Finally, the **Head of the Department of Planning** showed an average length which laid between 1 and 3.2. Organizational structure and personnel training were perceived as ends, while the Rail Plan and the investment programmes were seen as means, when both conditions exist and constraints are relaxed. The Rail Plan was considered to influence directly and positively the financial performance of the enterprise. The described decisions were not articulated in strategy chains.

To summarize, decisions perceived as having positive repercussions in the environment were rare. Some strategists mostly perceived their decisions as means when some conditions existed and constraints were released. Some others balanced their views. Their decisions were split between the two categories, that is ends and means.

Furthermore, the minor importance attributed to strategic units in the environment, as measured by the number of concepts used (**Figure 7.1**), was partly associated with the perception of strategic decisions as ends. Though to some strategists the high average length of causal chains including strategic decisions seemed to be related to the perception that these decisions impacted on organizational performance, this did not pertain to others.

It should be stressed that constraints and conditions were not the same in strategists' rationales. Some strategists argued about the negative impact of some governmental policies while others viewed them as conditions (assigned total discretion to Government's decisions). Thus, though a constraint could be perceived as a stimulus leading to shaping a problem and developing solutions, a condition might involve a longer process of giving rise to problem awareness and it did not necessarily imply that some actions were to be undertaken and their implications to be measured. This was reflected in the average length of chains of reasoning which were longer when constraints were the "*triggering points*" initiating the strategic decision, and shorter when conditions were involved.

As far as impacts on organizational performance were concerned, the maps revealed that this was not an issue of major importance. Strategists seemed to take for granted the organization's poor financial performance despite the goal set in the Plan to reduce deficits. Only one strategist articulated training, structure and career pathing and argued about their combined impact on performance, while another one saw divestment from rolling stock activities as the most influential factor upon it (as a subject matter, though never included in the agenda). It seemed that control concepts and their positioning as ends in chains of reasoning and not as means for achieving a new state of affairs played a crucial role for this.

7.3.3. Patterns in Cognitive Maps Derived from Matrices

In **Chapter 4** it was argued that the type of matrix used could be divided into nine sub-sectors. Four of those were selected to be presented and further analysed in this section, and were the ones denoting: (1) the impact of strategic decisions on a strategic decision, (2) the impact of environment on strategy, (3) the impact of organization on strategy, and (4) the impact of strategy on environment. The following indices were considered:

- Sector Density, which is the number denoting the percentage of identified relationships over the potential relationships of the sector.
- Sector Strength, which is the number denoting the percentage of strong relationships (2, 3 values) over the overall number of identified relationships of the sector.

- Number of cycles. As described in **Appendix F**, when the structural matrices (that is, matrices derived from scores matrices when all cells that contain a value change by placing in the cell a unit, indicating that a relationship exists) are squared, the new squared structural matrix contains in its diagonal the number of loops (cycles).

As evidenced from **Figures 7.3 and 7.4**, though the sectors density of the strategists matrices did not vary very much (so one could say that strategists attained approximately to almost equal cognitive variety), the sectors strength exposed a large diversity. Thus, one might assume that the strength of the perceived relationships was based on personal grounds.

On the other hand, **Figures 7.5 and 7.6** do not present a similar sector density, and this also applies to sector strength. The decision-makers, as far as the influence of the organization on strategic decisions and the influence of strategy on the environment are concerned, perceived different and idiosyncratic patterns. This contrasts with the influence diagrams' concepts that were mostly placed on the organizational side. One would assume, that since the interest stemmed from the inner environment, some issues could have been perceived as having the same strength in their inter-relationships. This did not prove to be the case.

strategist	potential entries (no.)	identified relationships		strong relationships		loops
		no.	% (density)	no.	% (strength)	
Assistant G. M.	90	36	40	15	42	Engineering Projects 9 Rolling Stock 7 294/83 Contract 7
Head of Planning	90	37	41	21	57	Rail Plan 5 Organizational Structure 4
Employee Rep. 1	90	39	43	14	36	Annual Budget 11 Rail Plan 9 Business Plan 10
Employee Rep. 2	90	44	49	29	66	Organizational Structure 8 Rail Plan 7 Business Plan 6
Employee Rep. 3	90	48	53	17	35	Annual Budget 18 Rail Plan 14 294/83 Contract 14

Figure 7.3: Strategic Decisions on Strategic Decisions

strategist	potential entries (no.)	identified relationships		strong relationships		loops
		no.	% (density)	no.	% (strength)	
Assistant G. M.	80	31	39	10	32	Government's Economic Policy 7
Head of Planning	80	29	36	18	62	Administrative Controls 4
Employee Rep. 1	80	39	49	29	74	Policies Incompatibility 11 Employment Maintenance 10 Government's Policy 8
Employee Rep. 2	80	36	45	15	42	Employees Participation 8
Employee Rep. 3	80	41	51	10	24	Administrative Controls 16 Problems with Suppliers 14

Figure 7.4: Environment on Strategic Decisions

strategist	potential entries (no.)	identified relationships		strong relationships		loops
		no.	% (density)	no.	% (strength)	
Assistant G. M.	70	22	31	2	9	Corporate Culture 7 Bureaucratic Phenomena 7 Decision-making System 8
Head of Planning	70	22	31	13	59	Management System 10 Decision-making System 7 Task-design System 7
Employee Rep. 1	70	37	53	20	54	
Employee Rep. 2	70	18	26	5	28	Decision-making System 6 Management System 6
Employee Rep. 3	70	41	58	6	17	Bureaucratic Phenomena 20

Figure 7.5: Organization on Strategic Decisions

strategist	potential entries (no.)	identified relationships		strong relationships		loops
		no.	% (density)	no.	% (strength)	
Assistant G. M.	80	22	28	8	36	
Head of Planning	80	9	11	5	55	
Employee Rep. 1	80	18	23	6	33	
Employee Rep. 2	80	17	21	6	35	
Employee Rep. 3	80	46	58	12	26	

Figure 7.6: Strategic Decisions on Environment

The number of loops seen as an index of measuring dynamic effects and cognitive strain, varied considerably in the decision-makers' matrices. Sometimes, the concepts involved (expressing the highest number of loops) coincided with the identified strategic decision. Other times, they were just concepts only included in the influence diagrams. There were also instances when the concept exhibiting the highest value was not mentioned at all in the influence diagram.

7.4. SYNOPSIS

The first part of this chapter provided the definition of strategy according to each Board-member and brought into the stage the members' characteristics such as tenure, professional/functional experience, age, and representativeness.

These strategy definitions exhibited variety; there were perspectives directed to the environment; there were other perspectives that took this environment as given and complied to it; there were also perspectives which, while pin-pointing to organizational problems, stressed that the environment was the main source of these problems. They

also noted that these problems would disappear as soon as the environment becomes certain and stable.

The second part dealt with patterns derived from both influence diagrams and matrices. This was attempted in order to investigate similarities and/or differences in structural configurations as well as in the perspective conveyed by the notion of strategy.

In summary, all concepts in the environmental sector tended to balance in importance, with the exception of the government which was perceived as playing the more crucial role in defining strategic decisions.

Regarding the organizational concepts, the managers tended to value structure and processes, and to put financial matters in the second place. In the organizational sector, a great diversity of factors received minor importance on the part of each Board-member.

The majority of strategic decisions was located in horizontal chains, initiating from or leading to the environment. Inter-relationships between strategic decisions were only found in half the number of the cases examined, and they concerned different decisions.

Also, the reasoning addressing strategic thought was short. Organizational performance rarely was a constituent part of the Board-members' rationale; however, in the rare cases it was addressed, it tended to be associated with the longest chains encountered.

Another major finding concerned the differences attributed to the meaning of several factors. Some Board-members attributed negative meaning to them; thus, these factors were identified as constraints; other Board-members perceived the same factors as conditions; thus, they assigned to them a positive meaning.

The analysis of the matrices' indices proved that the strategists' cognitive maps derived from matrices often illustrated a different reality from the one depicted in the influence diagrams. This may be explained by the fact that the strategists, when asked to score on matrices, thought for the first time about some relationships. This has also been pointed out by other researchers who employed this technique in order to map the strategists' cognitive frames (Stubbart and Ramaprasad, 1988).

The cognitive maps derived from matrices revealed some similarities with the influence diagrams, though these similarities were limited. Overall, scoring in the matrices followed an idiosyncratic way and an agreement on the impact of financing on modernization projects as well as on the impact of annual budgets on the implementation of the Plan was traced.

CHAPTER 8

THEORY DEVELOPMENT

8.1. INTRODUCTION

The aim of this study was to enhance our understanding of how strategies evolve in public organisations, by looking into the role of the members of the Board and their impact on strategy development. To accomplish this, firstly, documentary evidence concerning decisions made by the under study Board, was collected and analysed in **Chapter 5**. The outcome of this phase was concerned with (1) the classification of decisions across different categories, termed decision-areas, and (2) the detection of patterns illustrating frequencies across the identified decision-areas. Secondly, empirical evidence based on interviews with the Board-members was collected and analysed, using a cognitive mapping approach to understand their perception of the strategy concept; this was presented, in detail, in **Chapters 6 and 7**.

This chapter synthesizes the two streams of evidence collected and analysed so far, with the aim of assessing the degree to which the Board-members' perceptions about strategy influenced the patterns of decisions that occurred in the organisation, and thus to highlight the role of a Board in a public setting in terms of its influence on strategy formation.

The chapter is organised in seven sections. Following this introduction,

Section 8.2 introduces the concept of strategy across the Board-members and highlights the characteristics that pertain to it; these characteristics exhibit some differences from the ones discussed in the literature.

Section 8.3 is concerned with the Board's attributes and focuses on problems deriving from its composition, structure and processes.

Section 8.4 illustrates the role of the Board-members in the strategic areas studied, in terms of their involvement, commitment and consensus to change.

Section 8.5 derives a typology of the relative roles of Board-members and the patterns of decisions within the strategic areas; this typology suggests that most of the Board-members perform a legalistic role and do not seem alert to the organizational signals that come up as proposals for decisions.

Section 8.6 addresses the role of the General Manager as the enterprise's powerful strategist (in the sense that he had the capacity to bring about the outcomes he desired) and argues about the way strategies do form in this public firm.

Section 8.7 concerns a more detailed discussion of the findings that are considered different and in a way new (compared to the ones found in the literature) and builds on them in order to propose lines for further inquiry.

8.2. THE STRATEGY CONCEPT

Several important findings about the strategy concept emerge from the construction and analysis of cognitive maps. Evidently, maps were not the same across the Board-members; yet, there were some similarities that accounted for a social reconstruction of reality and social intercourse (Eden et al., 1992; citing Berger and Luckmann, and Kelly). A summary of findings on the strategy concept is presented in this section and interpreted in the following one. The subsequent sections will deal with findings on Board attributes. All findings will be interpreted by drawing on findings of the literature in the strategic management field. Finally, the evaluation of findings will indicate their contribution to the existing literature, be it additive, or confirmatory, or generic of a new perspective.

8.2.1. Key Findings on Strategy

(i) Strategy was conceived by the majority of Board-members as something that happened outside them, something over which they had little control.

(ii) A cognitive view better describes this ingrained way of perceiving the world, that is the way in which events were interpreted by the decision-makers. The interpretation and meaning of strategy derives from the analysis and exploration of cognitive structures of individuals. The nature of concepts depicted, their location in the sectors identified, the number of links and the value they attributed to their chains of reasoning leading to

strategic decisions, all were significant to outline some of the thought-processes the Board-members in this public organization used, in order to make sense of strategy.

(iii) Strategies tended to be associated with the environment either directly or indirectly through organizational sub-systems. The environment consisted only of few concepts, the prevailing one being the government. Strategies tended to be fragmented (rare links between them existed), and arguments about them differed in terms of the way in which issues involved were addressed (in a negative or positive sense). Consequences of strategic decisions were rarely traced.

(iv) Detailed arguments exhibiting long chains of reasoning were detected, mostly in the managers' accounts (especially those involved in the change process, working for it also outside the boardroom) and concerned only few strategic decisions. Officials and some of the employees' representatives used in their reasoning short paths. The weight the Board-members assigned to strategic decisions and on factors influenced by, or influencing them was based on idiosyncratic grounds.

(v) In the cognitive maps, loops were absent. That is reasoning processes displaying reciprocal causality were not traced in the maps.

(vi) Overall, cognitive maps succeeded in making the connections between sets of factors explicit (the factors themselves having been defined by the Board-members). The Board-members' cognitive structures were characterised by fragmentation, variety, brevity of reasoning and lack of inclination to confirm reality with their peers on the Board; in each member's map, there was little or no mentioning of any of the other groups of stakeholders that participated in the Board.

The next section, by drawing upon the literature on cognition and strategic management, builds on the above findings, in order to generate explanations that would account for the cognitive schemes of the Board-members with respect to strategy.

8.2.2. On Strategic Management Decisions Processes

This section sets out to appraise the concept of strategy as revealed by the members' definition. The richness of theory in the field of strategic management may benefit the research findings which when articulated within it may offer a deeper insight or open up a new perspective.

The literature review on strategy formulation/formation (presented in Chapter 2) has shown a diverse and large number of approaches dealing with the definition of strategy. First, there are the ones that treat strategy as a process of analytical design and formal

planning (Ansoff, 1965, 1979), stressing the importance of financial objectives and the definition of the competitive strategies (Porter, 1980) and adopting a normative stance. Second, there are the approaches that examine the impact of behavioural and political factors on strategy-making and focus upon the dynamics of the interactions among individuals and organizational sub-units as they endeavour to influence strategic decisions (Allison, 1971; Pettigrew, 1973). Others look at strategy as an *a posteriori* process (Mintzberg et al., 1976; Quinn, 1980; Johnson, 1987; Pettigrew, 1985; Pettigrew et al., 1992); they rely on descriptions rather than prescriptions and stress important aspects of strategy formation, including incrementalism and emergent strategy, the influence of existing structure on strategy, and the full participation of actors other than the General Manager (Mintzberg, 1990). Among them, the cognitive school (Daft and Weick, 1984; Huff and Schwenk, 1985; Pondy and Huff, 1985; Mason and Mitroff, 1988), focus on the reasoning processes of key organizational actors concerning organizational change and adaptation.

Strategy is defined as the pattern or plan that integrates an organization's major goals, policies and actions sequences into a cohesive whole. A well formulated strategy, by means of resources allocation, positions the organization into a unique and viable posture based on internal strengths and weaknesses and anticipated changes in the environment (Ansoff, 1984; Quinn, 1980). The major element in this definition of strategy as a unified, integrated plan, ensuring that the strategic objectives are achieved, creates an idea of positive, purposeful, tightly controlled process of conscious human thought (Mintzberg, 1990).

8.2.2.1. *On the Structure of the Maps*

In terms of the individual's cognition about strategy, if this was to follow the definition offered above (which is one of the most cited definitions in the literature), then the influence diagrams, in general, would display a structure in which strategic decisions would be positively influenced (1) by key success factors stemming from the environment and (2) by distinctive competences stemming from the organization. Strategy, in this sense, can locate an organization in a niche (Mintzberg, 1990); thus, one may assume that expressions of strategic decisions would be also stated in positive sense. Furthermore, the choice of strategy (since the case in this study deals with an implementation process) would lead to ramifications ensuring the effectiveness of the enterprise (Quinn, 1980). Finally, because strategies should be explicit to those who make them and, if possible, articulated in such a way that others in the organization can understand them (Christensen et al., 1987), this would mean that top decision-makers would share a set of strategic decisions supported by a similar reasoning, since explicitness helps in the building of a trusty and consentious atmosphere in social interactions (Argyris and Schon, 1980), and integrated into a comprehensive scheme.

The influence diagrams in this study displayed an hierarchical structure that was most often in the form of a means/end graph (Eden et al., 1992). Meanings attached to strategic decisions were derived from the content of factors included in the cognitive structures as well as from the linkages among them (Silverman, 1985). The majority of Board-members perceived the environment as consisting of legal/political entities, and, to a lesser extent, of suppliers, competitors and trade unions. Thus, environmental complexity was low, especially when adding that perceived relationships did not exist among the environmental elements (Tung, 1979). Also, the rate of change referring to the frequency and magnitude of turbulence (caused by the new institutional arrangements and governmental policies) influenced the amount of perceived uncertainty and initiated negative causal chains.

The decision-makers operationalized strategy in terms of the perceived environmental uncertainty. To cope with perceived environmental uncertainty, the organization uses the strategies and seeks to approach some degree of rationality (Thompson, 1967). Yet, decision-makers kept feeling "*unsure*" about the environment; the formulation of strategy did not considerably reduce the level of uncertainty. Apart from a few examples, strategic reasoning was associated with a "*threat*" category, denoting a negative situation in which loss was likely and over which decision-makers had relatively little control (Dutton and Jackson, 1987). Since uncontrollability is a key element of a threatening stimulus (Mintzberg et al., 1976; Tung, 1979; Nutt, 1984; Fredrickson, 1985), strategies viewed in this sense could be described as driven by the environment, thus imposed. In Mintzberg's (1988) definition, this occurs when the environment dictates patterns in actions, either through direct imposition or through implicitly pre-empting or bounding organizational choice.

Since the environment was described as negative, and the organization needed to function during this period of unpredictability, strategists felt not sure, and thus they could not articulate any viable strategy. This may explain the adoption of this reactive and disconnected stance (Mintzberg, 1990).

Strategic decisions did not lend themselves to aggregation into a single massive decision matrix where all factors could be treated simultaneously, or in a sequential order, in order to arrive at a holistic optimum. This coincides with similar findings in the literature (Quinn, 1980). In this case, apart from the individual's capacity to handle complexity and ambiguity (Simon, 1958; March and Olsen, 1963), the key importance was attributed to the "*management process limits*". While studies note that this process can be managed incrementally by a successful executive who guides the pattern of escalated or accepted proposals to suit his own purposes without getting prematurely committed to any rigid solution set (Quinn, 1980), this research focuses on the

participation of other top decision-makers, and treats them as intrinsic and interactive parts of the process of strategy formation (**Mintzberg, 1988; 1990**). The interesting and new finding, in terms of the articulation of decisions, is that all decision-makers, including the General Manager, presented no articulation among the strategic decisions, despite the fact that the direction of influences in the graphs was opposite. The next section deals in detail with the perspective revealed in Board-members' maps and accounts for this difference.

Finally, cognitive maps displayed some other similarities. Feedback loops were, in general, absent. Although this finding has also been reported by other researchers (**Fahey and Narayanan, 1990**), this study explicitly links the absence of loops to a dysfunction of organizing. Theorists have noted the importance of such loops and proposed that organizations are established not on hierarchies of influence but on loops of influence (**Weick, 1969; Roos and Hall, 1980; Bougon and Komocar, 1990**). In this respect, change is the result of deviation-amplifying loops and organization the result of deviation-counteracting loops which stabilize the growth of a system. The absence of loops may indicate that the organization is static and solid and does not possess the mechanism to activate change.

8.2.2.2. On the Perspective Conveyed (assumptions about the nature and sources of change)

One additional shared characteristic of the maps was that the decision-makers' perceptions treated strategy as a dependent variable. Most of the chains of reasoning looked inwards and strategic decisions were conceived as ends, and as having been driven by the environment (**Fahey and Narayanan, 1990**). Only one notable exception, the strategy concept of the General Manager, changed this perspective. Strategies, in his map, were aggressive pace-setters (**Mintzberg, 1988**) that aimed at influencing the environment, establishing a new identity for the firm, and enhancing the company's effectiveness. Instead of looking at strategy as an outcome of a more or less definite process, the General Manager's perspective, that stood in sharp distinction with that of the majority, revealed a commitment to ways of acting and shaping the environment.

The analysis of the maps revealed that the average length of the chains of reasoning lay between very limited and low levels. One would expect that strategic reasoning dealing with issues that are more complex, unstructured, fuzzy, with socio-political considerations, would exhibit long chains of reasoning, because such issues would pose greater cognitive challenge to top decision-makers (**Diffenbach, 1982**). Also, an interpretive view of meaning and action that attempts to link individual cognition to organizational action (**Daft and Weick, 1984; Schwenk, 1984; Chaffee, 1985**) asserts that top decision-makers receive a continuous stream of ill-defined events and trends.

Some of these events and trends represent possible strategic issues for the organization because they are perceived as having the potential to have an effect on achieving the organizational objectives (Ansoff, 1984). Under such conditions, and also because strategic issues do not appear in pre-packaged forms (Dutton, Fahey and Narayanan, 1983), one would expect the associated reasoning to be extensive, with vague assumptions and perplexing contradictions (Diftenbach, 1982). Though these assumptions refer mostly to strategy formulation and not to post rationalizations about it, it seems that they would apply in this case as well, since major difficulties were experienced and strategy reformulation might be needed.

However, the net and short chains of reasoning could be explained by (1) The lack of information and communication, since concepts involved were used by strategic decision-makers to store information and aid communication with others about ambiguous strategic issues (Dutton and Jackson 1987); (2) The fact that errors of memory occurred; or (3) The fact that the method of elicitation of cognition was problematic (Eden, 1992). Although the second explanation cannot totally be rejected, since the study deals with an *a posteriori* narrative of events, the interview process (length of interviews, open-ended data collection and interviewee interest and collaboration) accounted for the above mentioned likely to occur distortions.

Concluding, probably when resources uncertainty and/or interferences by political/institutional forces are still experienced, the notion of strategy in *post hoc* rationalizations of events lacks the well-structured format advocated in the literature, where strategy is defined as a unified, comprehensive and integrated plan.

Strategies may be either fragmented, or loosely coupled, or even perceived differently by key decision-makers; this may last for a significant period of time. The assumptions that strategy is formulated and then implemented with organizational structures, control systems and other systems following behind did not hold true. Formulation and implementation were intertwined as complex, interactive processes in which political activity, values, assumptions about roles, organizational culture and management styles, all determined or constrained particular strategic decisions.

8.3. THE BOARD ATTRIBUTES AND BOARD ROLES

8.3.1. Introduction

The empirical evidence of the studied Board provided several findings in terms of Board attributes and Board-members' involvement in strategic decision-making. The key findings in this area were:

1. The new composition of the Board, after the appointment of employees' representatives, did not affect the balance of power within it. This was either due to the poor socialization process of the newcomers or to the unwillingness of the majority of the employees' representatives to assume a Board-member's role.
2. The inefficient structure of the Board caused perceived deficiencies: (i) The Board functioned on information provided mainly by the General Manager; the nature of this information was assessed by the employees' representatives as problematic. (ii) Also, for a considerable period of time, the Chairman of the Board served himself as the General Manager of the enterprise. (iii) Committees, in which Board-members would participate between meetings, in order to evaluate or propose new decisions, were not established.
3. Expertise on the Board was mainly conceived as familiarity with the company's operations and, especially, with the knowledge of the legal and complex procedures that derive from the legislation of public works. Familiarity with the industry operations was totally missing. In terms of professional background, the strong majority of the Board-members had an engineering degree.

The literature, as far as the contribution of Board-members in strategy-making is concerned, remains inconclusive. There are studies reporting that the Board-members are increasingly involved in determining and monitoring the strategic direction of the firms (**Heidrick and Struggles, 1990**). However, there is also evidence demonstrating that some organizations are resisting increased Board's involvement in strategic decisions, either because Board-members are constrained from getting more involved (**Lorsch, 1989**), or because "*the rules of the game*" define that Boards should not get too much involved in setting strategy (**Whisler, 1984**), unless faced with a crisis (**Mace, 1986**). A few studies that have directly examined Board involvement in strategic decision-making (**Tashakori and Boulton, 1983; Pearce and Zahra, 1991**) surveyed a single rater in each organization, studied by means of a questionnaire instrument. It seems, however, that much remains to be done, especially when recent researchers acknowledge that "*researchers simply do not know what Board's roles are in the strategic decision making process, nor do we know what influences that involvement*" (**Judge and Zeithaml, 1992; p.768**).

Board involvement is a complex phenomenon since it is influenced by both internal and external contingencies (**Zahra and Pierce, 1989**) and deserves further investigation. Therefore, the empirical evidence of this study will be interpreted along two lines which are not to be considered as separate; on the contrary, they are interrelated in the sense

that the first one informs the second; that is, it functions as the context against which the second line of interpretation unfolds. These two lines of interpretation refer to:

- (1) The Board's attributes, that is Board characteristics (or demographics), Board structure and processes and
- (2) Decision-making and strategy formation, in relation to the Board-members' roles, in the strategy-areas identified in this study; namely, (i) growth strategies, including the modernization projects decision-area; (ii) management control strategies, consisting of organizational structure and control strategies; (iii) financing strategies, containing budgets, loans and purchases strategies; and, finally, (iv) organizational capabilities strategies, referring to rewards/incentives and personnel training strategies.

8.3.2. Board Characteristics: Composition

What was important in this study was the representativeness of the groups participating in the Board. From a composition aspect, state officials, senior managers and employees' representatives were the three groups on the Board. The traditional dichotomy that most studies have used, that is the one of outsiders vs. insiders (**Baysinger and Hoskisson, 1990; Rosenstein, 1987; Tashakori and Boulton, 1983; Hill and Snell, 1988**), cannot apply in this case, since the insiders cannot be treated as an homogeneous group, because they have opposing interests, and due to the system of their appointment (elected by employees through the system of proportionate representativeness) may wish to confront management on a political basis. Therefore, disaggregated analysis seems more appropriate to meet the purposes of this study, and to account for the decision-making processes on the Board.

Additionally, when a change in the composition took place, that is the number of Board-members from the inside increased due to the establishment of the law, one may assume that this would signal a new era, characterised by active interest in internal matters and by more initiatives in making strategy work (**Zahra and Pierce, 1989**). Yet, as revealed by the respective strategy graphs, this change in the Board did not influence any of the strategic areas identified. This may have occurred because the newcomers felt rather weak and were absorbed by the values and orientation of the old Board. Characteristics such as educational background and professional expertise played an important role in the way the other groups treated the newcomers, and this was manifested in the rationales of both, managers and officers. It seems that insiders can contribute valuable insights and information to Board-room discussion and hence allow Board to be more involved in the strategic decision process (**Baysinger and Hoskisson, 1990**) only when they are seen as peers from the other Board-members, at least on the basis of those characteristics.

Concerning the Board-members from the outside of the enterprise, the literature is inconclusive as to whether Boards dominated by outsiders perform better than the ones that are not (Kesner et al., 1986; Zahra and Stanton, 1988). Yet, the normative literature stresses that outside Board-members are essential for ensuring an effective system of checks and balances (Molz, 1988). In this case, outside Board-members were all state officials; therefore, their appointment indicates that they should protect the government's interests. However, the lack of control over the enterprise and its implications were not contained in their rationales. If control was not the government's scope, one may question the way in which this control was exercised in reality. On the other hand, if control was not exercised, then what was the role of these Government representatives?

Concluding, if the Board's composition mirrors the characteristics of the firm's environment, then this proved also to be the case in this study, since all of the Board-members (with the notable exception of the General Manager) perceived the environment only in terms of governmental policies and trade unions. The resource dependence perspective (Pfeffer and Salancik, 1978), stressing that Board composition reflects the characteristics of the firm's environment and helps the firm to acquire resources vital to survive and grow, applies in this case only in half: As Board-members have considerable fiduciary responsibilities, they find it more prudent to stick to government's grants and loans.

8.3.3. Board Structure

Structure is one of the most important Board attributes. It influences the Board-members' decision-making style as well as their interactions with the General Manager. Its constituent elements were:

8.3.3.1. Information

The Board functioned on information provided exclusively by the General Manager. Only one employees' representative (the one affiliated with the trade union supporting the political party of the opposition) had information from different sources. The flow of information between the Board-members and the General Manager was assessed as problematic by the employees' representatives because it was excessive, unprocessed and inadequate, since it did not include alternative courses of action. Most of the times, it resulted just in one proposal, that is the one the hierarchy submitted to the Board (Aram and Cowen, 1983). Having no other data to rely on, Board-members felt incapable to challenge the analyses and recommendations of the General Manager (Tashakori and Boulton, 1983). The only Board-member that openly confronted the ex-General

Manager was the afore mentioned employees' representative; however, his intentions were perceived as political on the part of some managers.

8.3.3.2. Agenda - Board Leadership

When considering the fact that the ex-General Manager served also as Chairman of the Board for a considerable time of the plan's implementation, then it seems evident that control over the agenda was absolute. Evaluating executive performance became a thorny issue and rendered the Board more submissive to the General Manager's demands. Instead of being a partner in governance, the Board, in majority, simply ratified the managerial choices (Nader, 1984; Perham, 1983).

8.3.3.3. Internal Committees

No decision concerning the internal organization of the Board was traced. The Board functioned as a monolith, since there were no interactions on committees which could work out more thoroughly specific issues (Chitayat, 1981). It seems that the homogeneity in the professional backgrounds of the majority of the Board-members created the impression that the Board as an entity could deal with the most essential issues (the modernization projects). The literature argument that Board-members with different expertise and education are likely to serve on committees that benefit from these characteristics (Kesner, 1988) was not supported in this study. The internal contingency of the plan's implementation may have played a role too. The need to implement it quickly (because delays were perceived as causing problems) may have led the creation of these committees to be considered as an unnecessary delay.

8.3.3.4. Internal Process

Process usually refers to the approach the Board adopts in making its decision. In this study, the following elements were considered, as extracted from the Board-members' interviews: (1) Involvement, that is the degree in which the Board-members were active in performing the activities within each strategy-area. (2) Consensus, that is the level of agreement among Board-members on issues at hand. The literature supports that these variables affect the Board's performance of its strategic role. (Zahra and Pierce, 1987; Mueller, 1979) but it stresses that the low number of empirical investigations into Board processes is due to the difficulty in securing access to Boards, to observe over time. In the beginning of this chapter, this study argued about the way it dealt with process. The following section will examine which were the decision-making processes this Board employed and whether they were different across the strategy-areas studied. Finally, the Board-members' involvement and consensus are to be inferred, as well as the

degree to which they influenced the patterns associated with the strategy-areas. Ultimately, the way strategies were formed is to be highlighted.

8.4. BOARD ROLES AND STRATEGY-AREAS

8.4.1. Introduction

The central argument of this research was that by focusing on the individual member of a Board and by understanding his/her perception about strategy, then his/her influence on the strategic actions could be assessed. This can be achieved, if their role and the actual corporate governance practices are traced, and consequently account for the way in which strategies are formed in a public firm.

The legalistic perspective and agency theorists (**Chapter 2 Sections 2.6.2.1 and 2.6.2.3**) have not documented the extent to which Board-members perform their different roles and how they make decisions. Though the agency perspective emphasizes the crucial importance of the Board's strategic role, on the one hand, little documentation of this role exists, and, on the other, critics note that even if this contribution exists it is too rare to make a difference. These critics further stress that poor Board-members' selection and ineffective decision-making processes handicap Board-members' strategic contribution (**Zahra and Pierce, 1989**).

The following sections concern decision-making and Board-members' involvement in the strategy areas identified and infer the Board-members' impact on the patterns traced. A summary of key findings in these areas is presented below:

8.4.2. Key Findings in Board Roles within the Strategy-Areas Studied

- (1) Growth strategies, seen as an outcome, exhibited a high degree of stability in patterning and this coincided with the shared perception of Board-members about their strategic significance, in relation to the company's phase of life cycle.
- (2) External uncertainty concerned government's funding. Internal weaknesses dealt with the organizational capacity to cope with the increased technical requirements derived from this type of strategy and from the dysfunctions of systems and structure caused by this uncertainty.
- (3) Decision processes followed legal procedures. Excessive information usually accompanied the one proposal that arrived on Board. Employees' representatives were

seen as incompetent by powerful managers, because of their lack of expertise. The latter were the ones that set the pace for change in this area.

(4) Management control strategies, seen as an outcome, exhibited cyclical patterning. Board rationales associated with them seemed fragmented and disconnected, invoking diverse causes. Implications derived from this area were absent.

(5) Decision processes on the Board revealed only employees' involvement (only in terms of organizational structure) in shaping this outcome. Yet, politicisation occurred, because of mismanagement of this process, and this change was not realised.

(6) Control strategies were left unattended by the majority of the Board-members; the absence of loops in their rationales may be associated with it. No intention was traced to effect a certain change into this domain.

(7) Financial strategies, in a regulated organization, are all imposed by the government. The variety in patterns of organizational outcomes, especially some emerging ones, denoted an accentuated issue, yet, not to the degree to challenge the Board-members' convenient cognitive frames and to trigger their involvement.

(8) Organizational capabilities strategies which concerned personnel policies received minimal attention in the context of this Board. Surprisingly enough, the employees' representatives did not show specific interest in altering the established policies. Some narrow initiatives taken were all attributed to powerful managers.

Next section builds upon these findings and provides explanations in the light of the literature review.

8.4.3. Growth Strategies and Board Roles

The goal to be achieved in this area was growth, by means of the geographical expansion of facilities. The motive of decision can be described as reactive, since proposals were formed in the organizational departments, following a strict process fully described by law. Most of the time, the Departments formulated one proposal and this was submitted to the Board for ratification. Probing questions were only asked by the employees' representative affiliated with the opposition and they did not lead to revisions of strategic proposals, (1) because the confrontation was coloured by politicality and this could not encourage others to adopt his views, and (2) because a strong majority supported the organizational proposals because of lack of other information.

The lack of interactions among the Board-members, the poor structure of the Board, the rigid agenda, the prevailing perceptions of the Board-members having a technical background that monopolized the meetings, and also the sense that delays in the making of decisions could cause problems because dead-lines for the technical projects should be met and the organizational departments should function, all contributed not to making strategic decisions with top management. The Board-members' contribution seemed rather to be in the ratification of proposals. Furthermore, since they perceived the environment as uncertain, they were pressed to effect as many decisions as they could when resources were found. The size of moves was then bold and the decisions made and actions taken were forwarded to organizational units for immediate implementation.

Strategy in this area drew upon a schema that was part of the organizational culture as a whole. Since the organization has experienced a long history of consistent decision-making around this area (as the pattern of decisions manifests), one might suggest that this consistency molded also schemata which were drawn upon by actors involved, to rationalize particular organizational tasks. As researchers have noted, these schemata *"survive and are passed on to new members not only through organization stories, myths and so on but because they are stored in standard operating procedures of the organization"* (Huff, 1988; p.16).

Another explanation about the stability of decision patterns and Board-members' schemata draws on the concept of institutionalization. According to it, much organizational action reflects a pattern of doing things and becomes legitimated within an organization and its environment (Pfeffer, 1982). This perspective places great emphasis on environmental norms and the weight of the company's history as well as on the nature of organizational actions. In this study, this was reinforced by the fact that growth strategies were legally mandated activities and the Board itself was a legal entity; thus, there might be exposure to legal action if such strategies did not fulfil their legally mandated processes. Therefore, organizational actions can be predicted and explained by examining the nature of the firm and the nature of the decisions, in relation with the phase of the company's life cycle.

8.4.4. Management Control and Board Roles

The aim of this section is to bring together (1) the findings of the patterns associated with decisions falling into the organizational structure and control areas and (2) the Board-members' rationales, and to account for the involvement and commitment of the latter in shaping those patterns, as well as for the initiators of change within this area. Clearly, the arguments presented here will draw also on the findings of the previous section on growth strategies, since they are conceptually interrelated.

8.4.4.1 Organizational Structure Patterns and Board-members' Roles

A central debate in the strategic management literature is whether restructuring of the Board is required for better governance and managerial oversight (**Hoskisson and Turk, 1990**), or whether restructuring is a strategic move by top management which usually follows changes in strategy in order to meet growth and profit objectives (**Chandler, 1962; Scott, 1973; Andrews, 1987**). Others attempted to look at strategy and structure from a more multi-dimensional point of view (**Miles and Snow, 1978; Miller and Friesen, 1984; Quinn, Mintzberg and James, 1988**). Using unique definitions for the firms or the concepts of archetypes and contexts, they all examine common adaptive strategies and their structural and environmental correlates. In these two latter approaches, actors receive no attention at all. **Mintzberg (1990)**, in his critique of the rational view of strategy formation, which in his view makes a sharp distinction between the formulation of strategies on the one hand and their implementation on the other, thus separating thinking from acting, asserts that the premises of that model deny important aspects of strategy formation, including incrementalism and emergent strategy, the influence of existing structure on strategy and the full participation of actors other than the General Manager.

If the focal organization is seen as a machine bureaucracy with a powerful technostructure (**Mintzberg, 1983**), associated with an environment that is both simple and stable, then the following attributes characterize its structure: It has highly specialized, routine operating tasks, very formalized procedures, and large units in its operations. The basis for grouping tasks throughout the structure is by function, and co-ordination is effected by rules and hierarchy. Rules and regulations permeate their activities and indeed reflect an obsession with control; formal communication is favoured at all levels and decision-making tends to follow the formal line of authority. Only at the very top of the hierarchy are the different functional responsibilities brought together; therefore, only at that level can the major decision be made.

Thus, there can be strong resistance and conflict to innovation and radical change, given that organizational structures are designed to deliver given products/services in stable environments, rather than to create flexible and innovative structures for unanticipated needs, that is the ones that a growth strategy would cause (**Miller, 1986**). Under such conditions, it would be expected that the pattern of decisions concerning changes within this area would be highly incremental in nature, exhibiting a constant shape (lagged, probably, in relation to growth strategies), reflecting the mutual adjustments the organization makes, as a plurality of actors is involved in the decision-making arena (**Mintzberg, 1983; 1990**). This incrementalist perspective may also reflect a purposeful muddling through activity to achieve strategic change, through a continuous, evolving and consensus-building approach (**Quinn, 1980**).

However, this was not the case. Strategic change in this area exhibited a periodical tendency to converge and later to diverge; as **Quinn, Mintzberg and James (1988)** put it, this was "*the cycling into and out of focus*" (p.623). These cycles were not followed afterwards either by a constant shape (indicating a constant flow of decisions) or by a complete lack of decisions (indicating that a new order was institutionalized, thus decisions concerning restructuring were no more needed).

Yet, this patterning was not perceived by the Board-members as an emergent strategy (**Mintzberg and Waters, 1985**) which would alert them to the inefficiency of the existing structure and make them contribute to a major restructuring. General Managers, in both instances, were the initiators of the strategic change in this area. Board-members remained passive and simply ratified their proposals, with the exception of the employees' representatives who undertook the role of unionists and brought the case on the Court.

The goals to be achieved for the major restructuring on the part of the two General Managers were in both cases the same. However, the structure proposed differed considerably, as also did the process to effect them. The first change in structure, building on the opportunity of the Socialization Law, aimed at reducing the importance the Department of the Modernization Works had, and at enhancing the Department of Operations through which the main goal of the firm, that is the delivery of reliable services, could be achieved; thus, it looked as a redistribution of power and status which those in control were determined to upset (**Child, 1969**). The second change in structure, building on EEC proposals, used a financial concept, the transaction cost concept, to account for the new choice in structure. Thus, the central argument was whether a given transaction (a transaction being an exchange of goods and services from one party to another) can be undertaken at a lower cost via a market or within the hierarchy (firm), since the purpose of a transport firm was to produce services; all other activities were supplementary. If the costs of undertaking transactions via the market were lower, then the firm could gain economic benefits by divesting from these activities, otherwise it could continue internalizing these transaction within its own organization (**Jones and Hill, 1988**). The structure proposed and approved separated the functions of track maintenance and construction as well as that of rolling stock maintenance and procurements, in order to account for costs incurred and, if found appropriate, to further proceed to divestment.

Corporate structure was thus seen in different terms by these two top managers and additionally the process to gain consensus differed sharply; in the first attempted change, an authoritative style was used and confronted by trade unions possessing at that time an increased power, due to the recently established Law, while in the second, actions

perceived by the employees positively were taken in advance. This probably has contributed to the final result of adopting this second change given also the non involvement of outsiders and insiders alike.

To summarize, the Board's involvement in the shaping of this strategy was minimal, even when signals were received from within continuously; yet, when some involvement occurred, this effected in a negative means. Top management's initiatives clearly followed growth strategy, though the existing structure once stopped the implementation of the change, and when change at last got implemented this was in relation to a rearticulation of strategy, that is the new structure might affect strategy through the anticipated divestments (Ansoff, 1985; Andrews, 1987).

8.4.4.2. Control Strategies and Board-members' Roles

Control was also a legally mandated activity, periodically undertaken by the board, and as such its patterning should exhibit a consistency. According to the law governing the Board's functioning, every trimester, or earlier if judged necessary, the Board is informed by the General Manager about the execution of its decisions, concerning the entire progress of the Strategic Plan, as well as about market figures, concerning the effectiveness of services offered. The cyclical appearance of strategies in this area reflects that at times decisions/actions showed a definite propensity to converge, that is to exhibit patterning. Yet, this periodic convergence tended rather to stabilize itself into reiterating cycles. Which was then the Board-members' role in the shaping of these activities, given that (1) their rationales seemed disconnected, diverse and addressed in negative terms, and (2) the Board characteristics and structure posed several problems?

The goal to be achieved in this area was rather unclear. Board-members seemed not to know whether control referred to the evaluation of the activities of the General Manager or to those of the organization's as a whole. Within this area, "*choices*" made seem as conforming to a ritual. Given these rationales, the patterns revealed were rather emergent and circumstantial in nature, whilst the involvement of the Board-members was reduced to a formality.

The literature has argued that emphasis on strategic controls by managers was found to be negatively related to Board involvement in restructuring (Johnson, Hoskisson and Hitt, 1993). Other studies concluded that most Boards are involved in oversight of strategy and managerial monitoring rather than in strategy formulation (Harrison, 1987). Yet, studies relying on Board demographics, Board structure and processes have produced opposite results where the majority of Boards perform a rubber stamp role for the managerial proposals (Pearce and Zahra, 1991).

Theorists dealing with the public sector note that the first issue inhibiting a move from a bureaucratic to a managerial control system is a cultural one. Control philosophy in public enterprises suffers from its adherence to budgetary line item limits and not to the accomplishment of results. Also, managerial orientation inhibiting the delegation of responsibility, the absence of market forces, personnel policies all are barriers that render ineffective the control system (Young, 1988). However, it was also noted that public managers have weaker authority over subordinates and lower levels due to institutional constraints (e.g civil service personnel system, purchasing and procurements system usually with an oversight agency administering them); external political alliances of subunits and subordinates (Rainey, 1989); the influence of the press and the short tenure of top executives (Allison, 1983).

The empirical evidence in this study revealed that the issue of strategic control in a public enterprise's Board in which many stakeholders participate resembled the one described in public management literature. The absence of implications in the cognitive rationales concerning control and the absence of a linkage between control and structure fit to the above assertions. Board-members from the outside seemed to refer to a bureaucratic system of control (either mentioning their accountability to the Supervisory Board, or to the government) while inside Board-members only stressed the dysfunctions of the organizational control system, evidently as an explanation to their non-involvement in this area. Evaluating managerial performance would be in such case a paradox, since the majority of Board-members ratified, most of the time, the General Manager's proposals, without questioning them. Also, independence from management cannot occur given the information problems and this further reduces control (Molz, 1988). Thus, involvement in shaping control strategies was absent on the Board, and strategies in this area seemed rather perfunctory (Fleischer et al., 1988; Loevinger, 1986).

Finally, one could stress an additional explanation for this lack of control, and its association, in rationales, with negative concepts. If control is perceived as a threat issue, then Board-members would be likely to construct or generate an organizational response that includes taking actions directed at the internal environment (Dutton and Jackson, 1987), since internal activities are easier to access and manipulate. Yet, this choice is also a function of the societal culture in which the organization is situated (Child, 1981). If societal culture at that time was immune (as judged to be the case) of such considerations, then control issues would delay to be tackled with. When the focal firm is a public firm as well (where issues are more sensitive to public opinion), then this argument takes on an additional weight.

8.4.5. Financing Strategies and the Board-members' Roles

Strategies in this area were all imposed by the government. In this case, the environment had total discretion over the enterprise (**Mintzberg and Waters, 1985**) and dictated the patterns in actions by pre-empting or bounding organizational choice. These strategies, as imposed, were internalised and made deliberate by the majority of the Board-members. The service role of the Board-members emphasized by the legalistic perspective (**Chapter 2 Section 2.6.2.1**) seemed not to pertain in a case of a public firm. Board-members, outsiders and insiders alike, were not conducive to funds raising. The exception of the General Manager revealed (through his successful initiative to apply for EEC grants) that however narrow some margins might look there are always lines to be pushed further.

Financial pressures seemed not to have forced a strategic redirection within this area. Moreover, whether a financial crisis is labelled as a threat or as a given is an unclear factor. State officials perceived it as related to the public character of the firm, while managers felt constantly threatened and considered that if a financial stability is achieved, then the organizational weaknesses should be tackled with. Only the General Manager perceived it as an opportunity for radical change. He used the financial crisis to accelerate the process of rationalization, to drop the seeds for the necessity of a new organization (the issue of divestments) to implement a new structure and systems. It seems here that personality is important and personal skills are the building blocks in conceptualizing, integrating and managing change (**Pettigrew et al., 1992; Pettigrew and Whipp, 1991**), in an area where all participants feel uncertain or passive.

8.4.6. Organizational Capabilities' Strategies and Board-members' Roles

The goal to be achieved in this area was the smooth functioning of the rewards and incentives systems within the organization; they included the career development system, the pay system, and personnel training. Yet, the career development system had not changed in all these years and the decisions falling into this area concerned only the appointments to the post of head of Department. The pay system changed almost in the middle of the plan's implementation just a few months before the new Board took tenure and was mainly the outcome of the Assistant General Manager's initiative, though no association with performance was made in it. Personnel training received a little attention; decisions in this area referred to rare instances where Board's permission to grant educational leaves was needed. Personnel training programmes were designed outside the boardroom by the two powerful change agents, the General Manager and the Assistant General Manager.

The choices within this area were mostly made by consensus. The size of moves within this area can be described as circumstantial, since appointments occur when posts become vacant due to retirement and the applications for leaves of absence are very rare. Thus, the pattern of activities was arranged by internal contingencies; the Board-members' role was not active in shaping the manager-strategy alignment. The long-term objective to insure the availability of skilled managers by specifying the sequence of training and development experiences needed by designated individuals to realize their potentials (Kerr and Jackofsky, 1989) escaped their attention.

The question that arises is why Board-members, especially the insiders, failed to address this issue. It may be that management development may entail significant costs to the organization. Apart from the resulting cohesion and pressure for conformity it can also serve as a basis for excessive control and manipulation (Janis, 1972).

Another possible explanation could be attributed to the public nature of the firm since it has been argued that public firms show more highly structured, personnel policies which most of the times resist change. especially when there is no relationship between performance and extrinsic rewards (Rainey et al., 1986; Rainey, 1989).

Finally, another plausible explanation is that the effectiveness of a development system is heavily dependent on other subsystems, such as control systems. When such systems malfunction, this lowers the credibility of the development effort and the willingness of senior managers to participate (Kerr and Jackofsky, 1989).

8.5. A TYPOLOGY OF STRATEGIES AND BOARD ROLES

So far, it was shown that strategic decision-areas (growth, management control, financing and organizational capability) were associated with distinct patterns in organizational activity. However, the discussion about the Board-members' roles and attributes revealed that the majority of them performed rather a duty. Instead of being actively involved in strategy, control or service roles, the majority of them only discussed internal and external causes generated on an idiosyncratic basis, which were perceived as negatively affecting strategy. Board-members seemed not to receive the kind of information that would help them to understand the organization's general situation and possibly lead them to re-assess their sense of this situation. As a result, decisions made were probably biased, suffering from the representativeness heuristic (Huff and Schwenk, 1985). **Figure 8.1** substantiates the main points discussed so far in this chapter. It shows the four identified strategy-areas with the associated Board-members' rationales and the key Board attributes within them. The *x axis* illustrates the Board's roles in each of these

strategy-areas while the *y axis* refers to internal/external contingencies that shaped the strategy-areas. Thus,

- In the growth area, strategies were associated with short rationales, building on the urgent need to develop the infrastructure. Consensus was built around it. The Board-members' role concerned ratification of decisions forwarded through the hierarchy at a constant pace. Associated information was seen as excessive since it contained all evidence as the proposal was coming up through the various organizational levels.

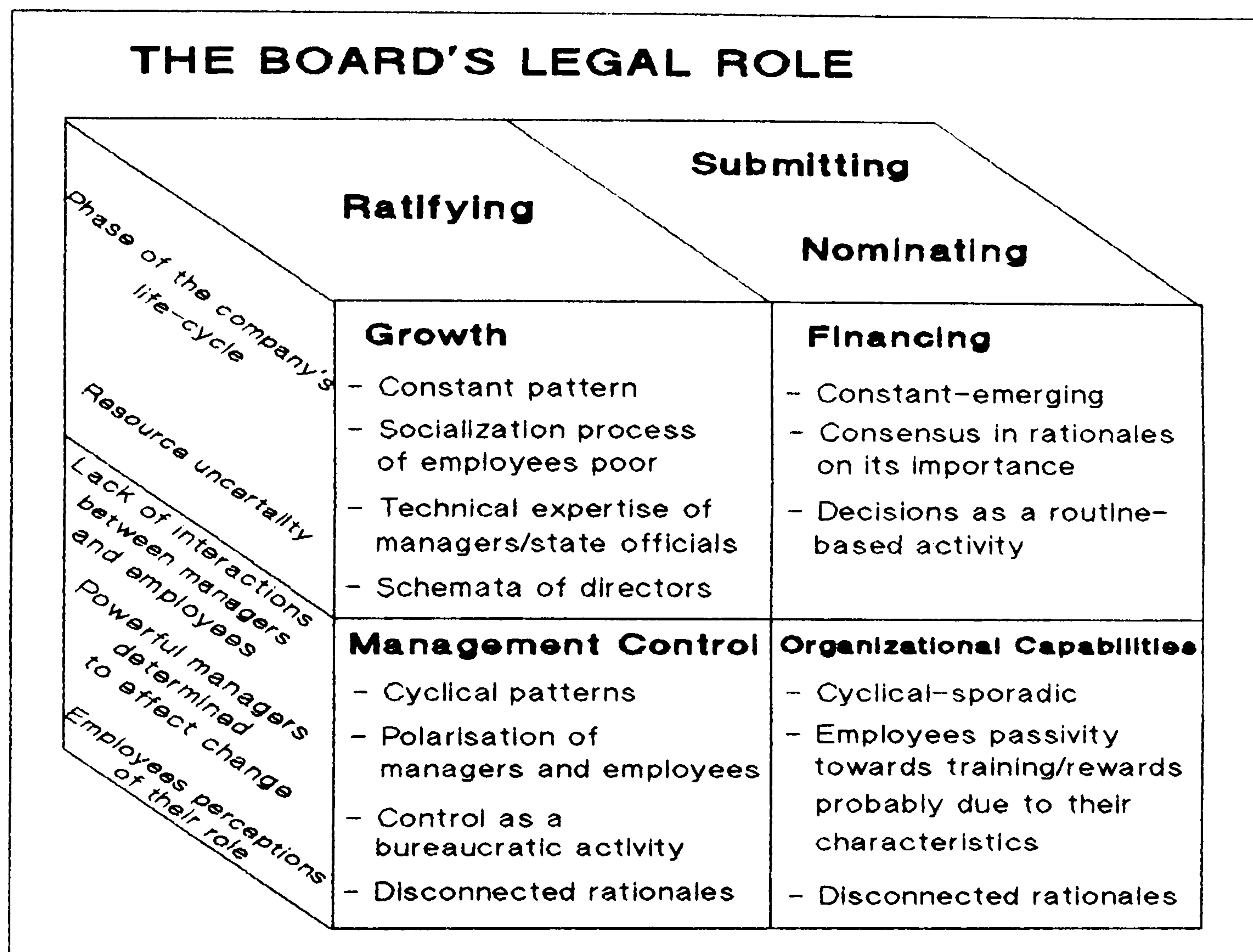


Figure 8.1: A Typology of Organisational Strategies and Board Roles

- In the management control area, strategies were associated with cognitive structures which, on the part of insiders, exhibited more links between concepts. Overt conflict between insiders seems to have been generated by the lack of consensus on the causes of the structure's ineffectiveness. Cyclical patterns in the structure and control areas did not trigger Board-members' intervention; thus, they did not assume a more active role.

- In the financing area, strategies were associated with shared cognitive styles. The Board-members' involvement concerned the fulfilment of their legally mandated responsibilities when they had to submit budgets and requests for loans to a higher authority.
- In the organizational capabilities area, strategy was disconnected between the reward and incentive system. Consensus in the making of those decisions did not indicate that there was involvement at least on the part of the insiders, to effect change. The patterning of decisions seemed rather coincidental.

In summary, the typology of Board cognitive styles, roles and patterns of strategic areas highlighted the importance of adding cognitive styles to Boards' characteristics. What other scholars stressed in a theoretical sense (**Hambrick, 1989**), it has been empirically shown in this study; that is, the interpretation systems of individuals affect the performance of their roles and through them the decision outcomes.

The new finding that emerged from this research was that cognitive styles can be considered as an operationalization of Board variables. In all the cases analysed, the cognitive structures of Board-members captured the inter-relationships among a variety of concepts, and cognitive maps depicted them in a manner that provided hints for the subsequent analysis/interpretation. Cognitive structures were used to gauge Board dimensions to the direction of revealing Board's role. It can be said that when the Board size is not large, the cognitive technique can be appropriate for studying the impact of individuals on organizational outcomes.

8.6. THE GENERAL MANAGER AS THE FIRM'S STRATEGIST- HOW STRATEGIES ARE FORMED IN THIS ORGANIZATION

The General Manager proved to be the only real strategist on the Board. First, he performed his service role and ascertained the funding rate for the continuation of the project in the growth strategy-area. He acted as a boundary-spanner who had access to vital information. His efforts centred on enhancing the firm's legitimacy, and by giving it a new vision he helped it to achieve goals of effectiveness (**Provan, 1980; Pfeffer and Salancik, 1978**). The core of his vision focused on service and new organization; its circumference involved the rhetoric and metaphor of persuasion, using positive sense and exhibiting an outward structure (**Westley and Mintzberg, 1989**). Second, in the management control area, he introduced strategic change via the major restructuring. Control strategies were left unattended, though one may argue that the re-examination of

the strategic plan that he realized and which proved its ongoing validity was a kind of strategic control (Schreyogg and Steinmann, 1987).

His manipulation of symbols and actions has given him a support-elevator role. This was first observed by Young (1988) who noted that a public sector manager must convince of the importance of the organization's activities in order to assure the continued support of governmental agencies as they set their budgetary priorities (Roos and Hall, 1980). Also, as Norburn (1989) pointed out, it is upon the General Manager's skills that strategic success is largely determined. Beyond that, Norburn (1989) has noted that many researchers view the role of the General Manager as changing. Strategic choice and performance accountability are not the only interests of his role. The latter, and this proved to be the case here, has expanded to include that of an internal focus for employee corporate identification and that of an external diplomat who negotiates with trade associations and with government.

In terms of the study's purpose, cognitive maps offered a first approximation to thought structures (Eden, 1992) located in the mind of the strategist, in the collective context of a Board. In this sense, they were much closer to strategy formation than other approaches dealing exclusively with outcomes. Cognitive maps in this study were rather simple; concepts included in them were different and idiosyncratically weighed. The analysis of the specific strategy-areas in relation with the role of Board-members presented the firm as a relatively submissive, simple-minded and single-minded strategizer.

If the strategy perspective revealed in this research is taken as a basis, then *"defective"* strategy is the major cause of the Board's passive role and of the absence of involvement and commitment in performing a strategist role within the organizational areas studied.

Bringing together, the Board's cognitive maps illustrated a picture of an organization that had an un-coordinated strategy over a considerable period of time, and which was submissive to environmental demands since it felt threatened by them. On the opposite, what was seen as a vicissitude by the majority of Board-members it was perceived as a challenge by the new General Manager who reversed the *"existing logic"* of fatality and introduced change.

Drawing an analogy with the well known typology of organizations/strategies proposed by Miles and Snow (1978) and enhanced by Daft and Weick (1984), the cognitive styles of the Board-members could be described in the following terms:

- (1) The General Manager was a prospector with a high degree of initiative with regard to the environment. The environment was seen as changing and as

containing opportunities. This is consistent with the enacting mode of interpretation.

(2) The Assistant General Manager was an analyser, concerned with maintaining a stable core of activities, but with occasional innovations, when the environment permitted. He was studying the environment and moving ahead only in a careful and constrained way. His views refer to a discovering orientation.

(3) Governmental officials were defenders. To them, the environment was analysable and stable and the organization was concerned with maintaining what it had already achieved and waiting for the government's directives. Their attitude was passive and related to a conditioning viewing mode of interpretation.

(4) Finally, the employees' representatives were reactors since more or less they accepted whatever was coming.

Before the arrival of the new General Manager, strategies were formed rather incrementally whilst, under his leadership, they were formed in a gestalt manner (a coordinated set of actions applying to most organizational areas), following the redefinition of the initial goal. As portrayed in his map, in order to introduce change the concept of the goal must be redefined and embrace new concepts and new conditions. If it can be said that the global goal was growth, then the discovered goal was the one defined after the constraints, their consequences and the new role this enterprise could play were articulated (Allison, 1983). The General Manager treated this redefinition as a social process in which the causal texture linked objectives, constraints and imperatives with benefits assigned to all the parties involved (the enterprise, the government, the general public).

8.7. CONCLUDING REMARKS AND FURTHER RECOMMENDATIONS

In explaining strategy formation in a public firm, the alternative of a cognitive orientation to account for the way principal actors shape strategy was demonstrated. Cognitive maps, their content and structure, as well as their inter-relationships may be one way in which explanations about actions, their nature, their interconnectedness, the involvement and commitment of key actors, may all be inferred. Such an approach, by centring on the individual strategist and by being informed by the unfolding of outcomes and specific actions, offers a much needed counter-balance to the proliferation of studies which have focused only on outcomes and used cross-sectional designs. Understanding strategy needs to bring to the central stage both content and process and the individual

strategist. Especially, in the study of a public enterprise, all these three elements should receive due attention. It is not enough to prescribe appropriate solutions for remedying problematic situations if the reality these firms confront is not fully understood.

In terms of the lines of inquiry that future researchers in the domain of Boards and strategic roles may wish to follow, one may cite the following:

(1) The Board-members' appointment and development need to be further explored. Related to this is the question of how Board-members are willing to learn and enrich their cognitive frames. In this area, of specific interest would be the application of cognitive mapping as a learning experience by an outsider analyst, who then could evaluate the degree in which changes have been incorporated into the Board-members' schemes.

(2) The processes by which some General Managers inspire and energize entire organizations. Also, the specific contexts that breed such changes need further exploration. As was the case in this study, the change of the ex-General Manager was not triggered by negative organizational outcomes or Board intervention. Rather it was due to his own wish to select another more prestigious post. Thus, the strategic change that was initiated in the firm was rather a haphazard event than a planned action.

(3) The absence of interconnectedness in the maps between concepts in the environmental sector and the strategy elements may be a cause for the distinctive facets of change in this public firm. More research is needed, in order to account for the way top decision makers in public firms conceive their environments, and the way they obtained information about them.

(4) This study highlighted the need for Board-members to develop an explicit approach for Board development. Although, in a public firm, the selection of the Board-members' majority rests in government's hands, Board committee structure, decision making style, the search for more accurate, pluralistic, and timely information are domains within the purview of a Board, and their impact on strategy making deserves further investigation.

(5) Trade unions need to re-examine the widespread notion that the role of the employees' representatives in the Board is to challenge the General Manager or to tolerate the perceived deficiencies since their role does not include control. Assuming, on the other hand, full responsibilities for their posts means adopting selection criteria for the unions appointees possibly different from the ones prevailing so far.

(6) Related to the spirit of the previous paragraph, as the competitive pressures will mount in the future, Board input into the strategic process will become a necessity. General Managers may need information about the industry as a whole or, especially, the task environment of the firm. If Board-members (appointed by government) possess such expertise, then this can induce better quality decision processes and will assist management. Conformity to directives or policies should be balanced against the need to operate viable public firms.

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Volume 2

Appendices

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APPENDIX A

ORGANIZATIONAL BACKGROUND

A.1. INTRODUCTION

A brief history of the enterprise studied is provided in this appendix as well as a balanced coverage of all major components of the railway, in order to properly weigh all factors involved, accounting for its performance. The appendix unfolds along these two guide-lines, and its constituting parts are the following: (1) a description of the stages the Greek Railways went through, until they reached their present state; (2) the state ownership and control; (3) the environment surrounding the organization; (4) the components of the enterprise; and (5) the performance of the enterprise.

A.2. A SYNOPTICAL HISTORY OF THE ENTERPRISE

Railways in Greece have a history of approximately 135 years. They comprised a mature industry during a period of drastic change, especially during the period which followed World War II. Demands for their services were greatly reduced by the rapid development of other transport modes such as highways and air transport. The country's economic activity and the geographical distribution of the population with the creation of two massive conurbations in Athens (population almost 3.5 million) and Thessaloniki (population over 1 million), caused broad changes in the mix of commodities to be transported as well as in the demand for various passenger services. Changes in the parameters of labour, material, and governmental policies all had a big impact on the supply side and the character of these services. Moreover, the inputs to produce them were altered drastically as a result of technological advances which occurred in Western Europe in the late 70s, and were the reference points for the modernization of the network, undertaken since that time.

A.2.1. The 1835-1970 Period

In 1835 Greece was again an independent country. The 13-year Greek Revolution against the Ottoman Empire, and the assistance provided by the Allied Forces of England, France and Russia led to the formation of a country with almost half of its present size. Though since that time proposals to set up railway lines were submitted to the Greek government, it was not until twelve years later that the need to operate a transport mode using the steam power was strengthened. In June 1855, the Parliament passed unanimously, the TZ/28-12-1855 Law "*On the Foundation of Railways from Athens to Piraeus*", concerning the connection of the capital with the port of Piraeus, a distance of 10 km. In 1896, the first train ran on the line which later was electrified and extended to include several suburban towns located in the north of Athens (OSE, 1984b).

During the same period new regions were incorporated to the country. In 1879 the plain of Thessaly is attached to the north borders, and three years later a project for the construction of railway lines was initiated. A private owned company constructed and operated a narrow gauge (1000 mm) single-tracked line which connected all major towns in the area with the port of Volos on the eastern coast. In 1886, the 160 km of the line were opened to traffic.

In the mean time, by the Law AΨME'/7-4-1889, the English company Eckersley started the construction of a railway line from Pireaus to the then Greek-Ottoman border at Papapouli. Various constraining factors such as the unfavourable economic position of the country, and the inability of the company to complete the project because of the lack of its own capital, considerably delayed the project. However, the Greek-Ottoman War of 1897 boosted the interest in the continuation of the construction of this railway line, and thus in 1902 a new private company under the name of the "*Company of the Greek Railways*" was founded to implement the initial project. The 394 km long standard gauge (1435 mm) single-tracked line opened in July 1909, providing the country with a much needed south-north transport corridor, which had yet to be extended to join with the Macedonian network, if a connection with Serbia (and via it with the rest of Europe) was to be established. Two small branches connecting the line with important ports on the eastern coast were also constructed. A 20 km branch to Khalkis on the island of Euboea and a 22.5 km branch to Styliada on the Maliakos Gulf, facilitating the trade with countries of the Black Sea and the eastern part of the Mediterranean Sea.

After the victorious Balcan Wars of 1912-13, and the attachment of Macedonia to the Greek State, the Greek Government bought off the "*Company of the Greek Railways*" and proceeded to the construction of the railway link (Papapouli-Katerini) between the

Greek line and the Macedonian network which was consigned by the Ottomans to three different companies, but came now under Greek control.

The World War I and the Asia Minor Catastrophe which followed in 1922, where the Greek army was completely defeated in the Middle East by the Neo-Turks of Kemal Ataturk (1 500 000 Greek refugees living until then along the Aegean coast of Asia Minor, came to settle in Greece), caused serious damages to the railway network. Heavy locomotives of the allied forces destroyed the line to such a degree that in 1923 a safe movement of a train on the line from Athens to Thessaloniki was not guaranteed. Government's grants though, made possible the renewal of the track infrastructure and the purchase of new rolling stock. In 1918 the Greek network was linked to the Serbian one and through it to the European.

While in the mainland the efforts to build an integrated network were enhanced, in the southern part of the country, the Peloponnese region, a company representing a group of banks under the name of "*Railways of Pireaus, Athens, Peloponnese*" (S.P.A.P) started in 1882 the construction and, after its completion, the operation of a narrow-gauge (1000 mm) single-tracked railway line. This line passes over the Korinth Canal and after arriving at the city of Korinth diverges into two branches; the first one follows the northern and then the western coastline, while the second being directed towards the south then is oriented to the centre of the region, arrives at Tripolis and merges with the first branch at Zevgholatio. From there, a 33 km branch provides a connection with the port of Kalamata located at the southern end of the region. In 1902 the line was completed but the company confronted bankruptcy because of externally defined overwhelming factors. The generous remuneration received by the State as well as some successful financial negotiations with banks helped it to carry on its operations. In 1918, S.P.A.P. was requisitioned until a six month period after the war's end.

In 1920, there were in the country two independent state-owned railway companies, S.P.A.P. and the "*Company of the Greek Railways*". The Government introduced a unified administrative scheme so their management was assigned to a separate administrative unit under the name "*Greek State Railways*" (S.E.K).

The network continued to increase in size. In 1920 S.E.K. bought the Thessaloniki to Alexandroupolis line which was part of the railway line from Thessaloniki to Konstantinople. In 1922, S.P.A.P. was parted from the state railways and formed a separate private company. In the network remaining under the State's control, efforts were now centred on upgrading the tracing of the existing line, on terminal and stations facilities, as well as on inaugurating attractive pricing policies for passenger services.

At the end of World War II the railways were found in a very difficult position. Although the railwaymen's accomplishments were astonishing (only in the S.E.K.'s network the first month of the war 2525 trains were on the move), what was left behind was merely a shadow of the pre-war enterprise. In the network of S.E.K., 93% of the steam locomotives, 98% of the coaches, and 84% of the cars were destroyed. From the bridges of below 10 meters span, 50% were demolished, while the destruction in bridges over 10 meter span as well as in tunnels, reached the 100%.

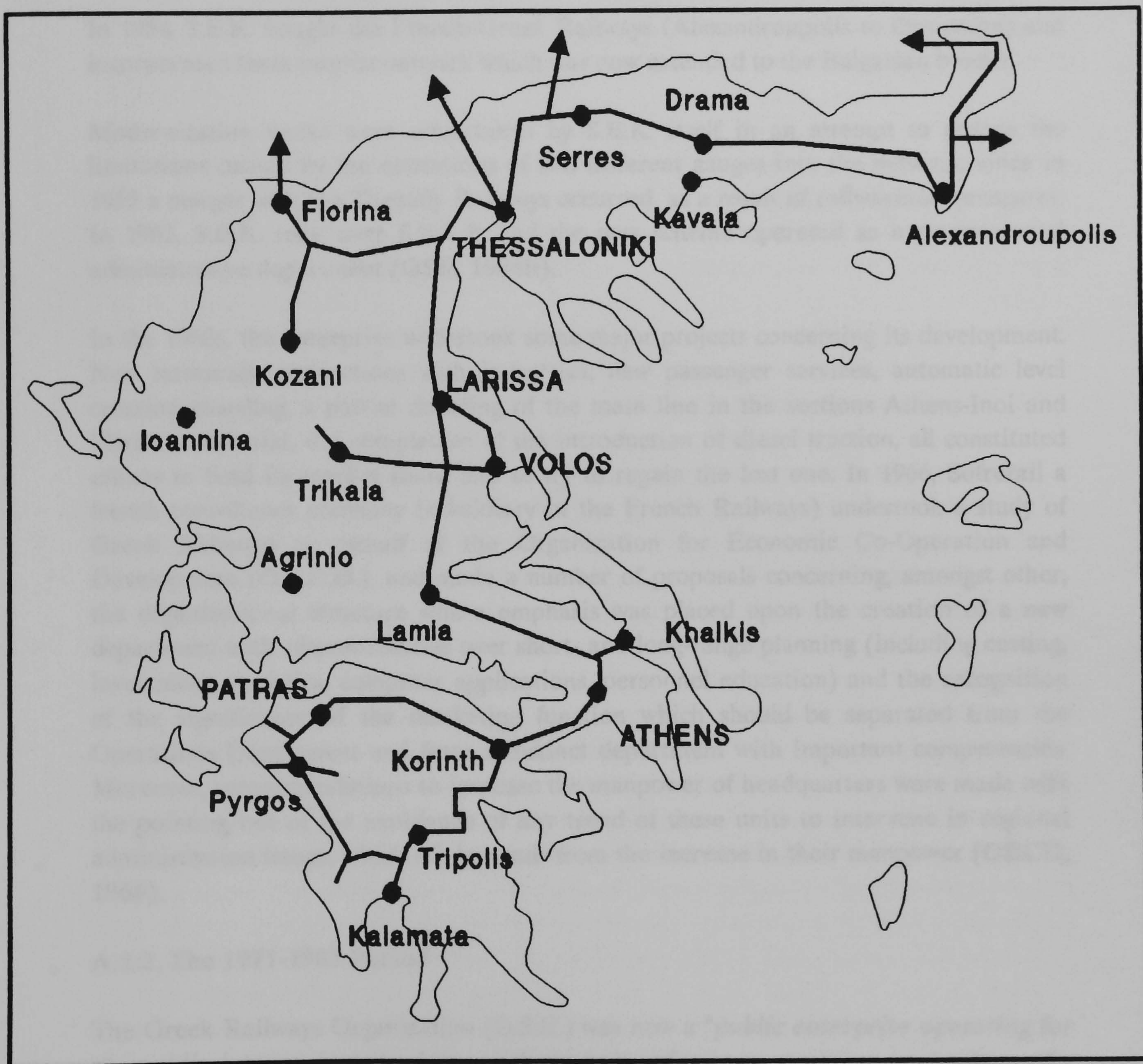


Figure A.1.: The Greek Railway Network

From the 2679 km of railway line, only 680 km were in operation. The Greek Civil War (1946-1949) that followed rendered more difficult the restoration works. The aid provided to the Greek Government through the Marshall Plan helped to restore the network in its pre-war state, though proposals for its modernization were also expressed. Prevailing interests lead the country to invest in highways and airports. Railways seemed to be left aside in the advent of a new era (Efstratiades, 1954).

In 1954, S.E.K. bought the French-Greek Railways (Alexandroupolis to Ormenion) and incorporated them into its network which was now extended to the Bulgarian border.

Modernization works were undertaken by S.E.K. itself in an attempt to reduce the limitations caused by the operations of two different gauges into the network, since in 1955 a merger with the Thessaly Railways occurred, as a result of railwaymen' pressures. In 1962, S.E.K. took over S.P.A.P. and the new scheme operated as a governmental administrative department (OSE, 1984b).

In the 1960s, the enterprise undertook some major projects concerning its development. New terminals, connections with industries, new passenger services, automatic level crossing guarding, a partial doubling of the main line in the sections Athens-Inoi and Plati-Thessaloniki, the completion of the introduction of diesel traction, all constituted efforts to hold its market share and to try to regain the lost one. In 1966, Sofrerail a french consultancy company (subsidiary of the French Railways) undertook a study of Greek Railways on behalf of the Organization for Economic Co-Operation and Development (O.E.C.D.), and made a number of proposals concerning, amongst other, the organizational structure where emphasis was placed upon the creation of a new department with responsibilities over short- and long-range planning (including costing, investment, statistics, computer applications, personnel education) and the recognition of the significance of the marketing function which should be separated from the Operations Department and form a distinct department with important competencies. Moreover, recommendations to increase the manpower of headquarters were made with the pointing out of the avoidance of any trend of these units to intervene in regional administration issues, which might result from the increase in their manpower (OECD, 1966).

A.2.2. The 1971-1983 Period

The Greek Railways Organization (O.S.E.) was now a *"public enterprise operating for the public interest in accordance with the rules of private economy, in the form of a joint stock company, enjoying administrative and economic autonomy and which is*

subject to all legal provisions stemming from the legislation of this sort of companies" (Act 674/70).

Though the decision to alter the company's legal status belonged to the then government, one can logically assume that the impact of the Sofrerail's study was decisive, since the report it produced was taken as a basis for the design of the new enterprise (Paradissopoulos, 1989). In 1971, a contract was signed between the Greek State and Sofrerail. The latter took on the designing of studies and the formation of an investment programme for the application of the latest international developments. This programme was incorporated into the 5-Year National Development Plan for the period 1976-1980 (KEPE, 1976).

O.S.E. started compiling the new rules and regulations concerning its new legal status. A new organizational structure was implemented, alike the one proposed by Sofrerail some years ago. The headquarters manpower increased considerably, and 896 new posts were created increasing the existing number at headquarters by almost 300% (Paradissopoulos, 1989).

In 1975, all the previous long-term plans of the enterprise were unified into a new 15-year modernization plan budgeted at 37 billion drachmas (OSE, Annual Report 1975). One year later, the Ministries Economic Committee approved a minimum investment programme of 6.2 billion for the period 1976-1980 (OSE, Annual Report 1976). In 1977, a loan was contracted with a group of German banks mounted at 100 million marks. The aim was to fund the larger part of the expenditure required for the doubling of two sections of the Athens to Thessaloniki main line (Inoi-Tithorea and Domokos-Larissa), the improvement of the tracing of the line and the introduction of electrical signalling in the above sections (OSE, Annual Report 1977).

While the company was undertaking its modernization plan, a 2.15% reduction in the railway traffic was reported in 1979, caused by the immobility of the rolling stock units, the intense competition in the freight market from ships, and the currency regulations that affected the imports of goods which in their majority were transported by train (OSE, Annual Report 1979). The entrance of Greece in the E.E.C. in 1981 accentuated this loss. Grain shippings were not any more the State's responsibility; the shippers were free to choose the carriers according to their own criteria and, as it proved, railway services did not meet them (OSE, Annual Report 1981). This reduction trend in both passenger and freight services ceased to exist in 1983, when the first increase in passenger services by 8.5% and in freight services by 14.4% (the percentages refer to comparison with the previous year) were reported (OSE, Annual Report 1983).

A.2.3. The 1983-Until Today Period

The general elections in 1981 brought in power for the first time in the history of the country, a Socialist Party, with a strong public support (48% of the votes), which support was renewed in the next general elections in 1985 (45% of the votes). Concepts such as self management and the central role of the trade unions as the sole representative of the working class were very popular, though not well defined in the party's electoral programme. A central tenet of this programme was that of the "*socialization*" of basic sectors of the national economy. What was meant by this term was that the management of the enterprises was to be widened by the inclusion of more stakeholder groups into it. Though no one knew whether such a scheme was to be applied to the private sector as well, the three biggest state-owned enterprises, Public Electricity Corporation (D.E.H), Greek Railways Organization (O.S.E.), and Organization of Greek Telecommunications (O.T.E.), first introduced in 1985 the following innovations concerning their administrative structure (Act 1365/83).

1. **Employees' representatives in the Managing Board:** They were elected by all enterprise's employees, through an electoral system based on proportional representation. Of the nine members of O.S.E.'s Managing Board three were employees while the remaining were appointed by Government. The General Manager was also elected by the Board.
2. **Social Control at Corporate Level:** A Social Control Representative Assembly (A.S.K.E.) was established, consisting of 27 members. Nine of these members were appointed by the Government, nine were elected by the employees and nine were appointed by various stakeholder groups such as local governments, the trade unions confederation, export organizations, chambers of commerce, technical chamber, economic chamber, chamber of small businesses, association of Greek industries, and confederation of agricultural co-operative societies.
3. **Social Control at Regional Level:** Regional assemblies (P.E.S.K.E.) were set up to provide for social control on a decentralized basis. They comprised the members of the Regional Council, an enterprise's delegate appointed by the General Manager, and an employees' representative elected by the employees working in the region. Nine major regions were created within which regional committees discussed and decided upon the proposals made by the enterprise on issues concerning railway development and activities in the region. P.E.S.K.E.s' functioning caters for and enriches that of A.S.K.E. and contributes to a better understanding of local needs and opportunities.

4. Work Councils: A central work council (K.E.S.) was formed at the company's headquarters, consisting of nine members all elected by the employees. It was concerned with issues related to personnel's rules and regulations, working conditions, and sanitary and safety conditions. Regional work councils were also elected at a local level.

Though the enterprise, at the time of this study, had only a four year functioning under the new structure, some remarks should be made in relation to the way this change was introduced and managed on the part of all interested parties.

At first, emphasis was placed upon the outcomes of the electoral confrontation, whereas the institution itself, its strengths and weaknesses were rarely openly discussed. It is not irrelevant that the trade unions enthusiasm was considerably reduced after the employees' representatives had been elected (and the power of political parties with which the unions were affiliated had been measured). Things such as the role of employees on the Board, what issues should they look after more closely, who is going to assist them in their job, to whom they must report, were left unanswered. Whether the stakeholders' representatives in all bodies serve personal, party's, railway's or other interests remains an open question. A major challenge facing this thesis is to provide an answer to this issue through their views (MNO, 1987).

Secondly, the socialization of the public sector was not strongly supported by either the personnel of the enterprise or the public opinion formulators. The main reason was an article (the fourth article of the Law) which was imposing restrictions on the industrial action in the public sector, and which became immediately active whereas the remaining ones waited for three more years in order to get implemented. Social upheaval occurred and this partly distorted the meaning of participatory schemes and created discomfort to the majority of employees (Paradissopoulos, 1989).

Finally, in 1895 a major economic crisis was under way in Greece. In order to cover the big public deficit and reduce inflation, the Government asked for a loan from E.E.C., which was granted under restrictive terms. The severe economic policy that followed led to an average reduction of the buying power of the working class by 16%. The trade unions opposed this policy; even unionists supporting the party in power voted against it and formed a majority in the General Workers Confederation. Government intervened and this led to a split up of the Confederation, which lasted for almost three years. The institution of socialization was left aside. Government withdrew its interest since other more important issues had arisen, and the other political parties did not consider it as worth fighting for, probably associating the concept with the negative context that surrounded it. Socialization as an idea was ruined even before it reached maturity.

During this period the enterprise continued to implement its modernization plan. Economic policy affected it as well, since public expenditure was considerably limited, and there were no other funding resources. Though the doubling of the line along the two sections of the main line was completed, the installation of the electrical signalling and telecommunications was delayed. The widening of the narrow-gauge Thessaly line was progressing slowly and in the Peloponnese network, apart from routine maintenance works, no other project was undertaken (OSE, Annual Reports 1985-1989).

The intriguing question concluding this section, concerns the capacity of the company to implement on time the plan in an environment where a great deal has changed and still changes, causing constant re-examination and revision of key strategic issues. Though as Wyckoff (1976) remarks *"the railroad situation is incredibly difficult because of the magnitude of the momentum of years of rigidity in practice, reinforcement of behaviour, on-the-job training, and large number of participants"*, an attempt to provide an answer to this question is worth making. Contributing to this aim, the following sections will provide some helpful insight on physical and operational characteristics of the Greek Railway and on issues of regulation, labour practices, and competitive development.

A.3. STATE OWNERSHIP AND CONTROL

The Greek Railway as already stated is an independent company through which the State runs the national railway network. Many administrative departments have supervisory powers over the enterprise. Within the terms of these supervisory powers, a number of management decisions is dependent upon the authorization of various bodies. Figure A.2 provides information on the different areas that are under administrative control.

The Government controls the overall level of grant aid and investment at will. There is no indication that the Government sets broad objectives for various sectors of rail activities. The total of investment requirements is covered by the State and with the Government's approval from the national and international money markets. Interest is paid according to the rate negotiated between the enterprise and various banks. Since many banks in Greece are controlled by the Government, the interest rates applied are lower than those raised in the free market. Other types of financial support include public service obligations for the coverage of the operational deficit because of tariffs control and the State's participation in the expenditure for the track maintenance and the manning of the level crossings (Act 674/70).

Though the above compensation payments are fully described in the enterprise's Foundation Law that governs the economic relations between the State and the company, usually, because of the State's interest in investing elsewhere, the payments obtained are lower than those needed (expenditure for infrastructure costs was for railways 9.3% of total transport expenditure in the period 1975-1984 whereas for motorways was 71.8% in constant ECU prices) (ESYE, 1986). Thus, the Government's financing as an investment contribution and as an aid to liquidity does not appear to be related to the annual accounting requirements. The maintenance of a high level of gross investment, because of the construction of the double line, accentuates the cash-flow problem year by year. In recent years the cash requirement which was raised on the market and which had to be subsequently serviced exceeded 23 billion drachmas in 1988 (OSE, Annual Report 1988). Thus the prevailing arrangements have resulted in an accumulation of capital indebtedness stemming from past deficits.

Concluding, the present system of control involves a wide area of the enterprise's activities. There is the absolute discretion to allocate investments grants, contracting loans and defining fares as well as selecting suppliers with ministerial approval. In reality, there are more controls that though informal are quite essential. They refer to the appointment of personnel, the transfers of employees, the life-long appointment of temporary personnel especially in pre-electoral periods (without knowledge of real needs this is done in exchange of political support for government). The railways, being a labour intensive and geographically dispersed organization, find themselves in difficult conditions when trying to initiate new policies. It is not unusual some new policies not to get implemented at all; very few people in the organization believe that the above constraining conditions could be relaxed, since all governments in power have used the same system of controls, at least during the last twenty years (Paradissopoulos, 1992).

Supervision and Control	Ministry of Transport
Approval of Investments Programmes and Budgets	Ministries of Transport, Finance, and National Economy
Pricing Policy Approval	Ministry of Commerce
Supplies Approval	Ministry of Commerce/Ministry of Industry
Appointment of Board Members	Prime Minister and Ministry of Transport

Figure A.2: The State's control over the Railway

According to the Socialization Law, the enterprise aims at the five following broadly defined objectives (Act 1365/83):

- (1) to serve the national interest and the society in general;
- (2) to facilitate the active participation of the employees in decision-making;
- (3) to co-ordinate the organizational functions with the national, regional, and local programmes of economic and social development, as well as, with the natural, social and cultural environment;
- (4) to save to the utmost the country's financial resources; and
- (5) to increase its productivity and efficiency to the benefit of its employees and to improve the services offered to society.

It is evident that the above objectives are amenable to a variety of interpretations since no quantifiable statements are included and some concepts as efficiency and productivity are not easily defined, especially under the framework of control described in the previous section. Though the environment and regional development are mentioned, the latter is left aside since the country's difficult physical terrain renders some parts of Greece severely disadvantaged (as measured by the cost associated with infrastructure development) and the existing population density does not allow for big investment in the periphery (bigger pressures are put on improving the quality of life in the large cities).

Despite the mentioning of the proper use of the national financial resources, there is nothing aimed at returning the enterprise to financial equilibrium, through establishing a long term investment programme or suppressing some formal and informal ministry interventions. Furthermore, the elimination of the massive residual deficit is not included into the primary objectives of the enterprise. It seems that the enterprise does not see itself as an entity that can negotiate with government and achieve at the end some agreed upon objectives compatible with the interest of both (Paradissopoulos, 1989).

A.4. ENVIRONMENT SURROUNDING THE RAILWAYS (TRANSPORT INDUSTRY)

In the period after World War II, railways all over the world found themselves operating in an environment which had three significant aspects that shaped drastically the enterprises' performance.

The first one was the tremendous expansion of other modes of transport as their technology improved, capital investment improved and their networks and operations grew, in response to increased demand. Especially the increase in motor cars numbers, primarily because of the flexibility, comfort and low cost of energy at that time of the new mode, resulted in the neglect of the mass transit systems, especially in countries where a railway industry (in terms of suppliers) did not exist to counterbalance this trend. In Greece the railway market share started declining and overall fell from a 50% in the pre-war period to a recent 4% for passenger traffic and 8% for freight traffic (OSE, Annual Report 1989).

The second reason was associated with the increase in and distribution of the country's economic activity and the lack of a planned transport network (incorporating all modes) that could accommodate the arising needs to the best interest of the National Economy. Costs, of course, should play an important role in the design of such a system, since infrastructure costs of all modes (in terms of tracks and terminals) are enormous. The existence or construction of competing transport corridors between massive urban centres should be carefully evaluated, when the contribution of transport facilities to regional development was well known.

The third reason was related with the Government's regulation over and ownership of transport enterprises; because of its significance, this issue constitutes a separate section in this appendix.

The figures that follow refer to the development of the other modes of transport such as road vehicles, ships and aeroplanes. The increasing traffic trends are easily identifiable, though in some cases the disaggregated nature of data is chosen to provide an idea of the potential size of the market when the railways would reach the design speed and the quality of service of their modernization plan.

Figure A.3 provides the development of road vehicles by category over a period of 13 years.

Figure A.4 shows the choice of transport mode in terms of import-export activities for the year 1985.

The numbers and the traffic of inter-urban buses (operated by private enterprises) are depicted in **Figure A.5**. As may be seen, between the years 1982 and 1986, despite the constant number of buses, the total number of passenger-km has increased that is, the offered seats per bus have increased and possibly the operating costs reduced.

Figure A.6 shows the arrivals of ships at ports where railway linkages also exist.

y e a r	t o t a l	R o a d V e h i c l e s		
		Buses	Motor cars	Freight
1975	650 053	13 352	438 553	198 148
1976	750 046	14 139	509 334	226 573
1977	900 308	14 538	620 755	265 015
1978	1 050 022	15 680	728 161	306 181
1979	1 195 531	17 464	822 034	356 033
1980	1 264 560	16 338	858 845	389 377
1981	1 370 833	17 367	912 385	441 081
1982	1 510 546	17 701	996 256	496 589
1983	1 624 472	17 591	1 069 343	537 538
1984	1 743 857	17 841	1 154 937	571 079
1985	1 882 558	18 237	1 263 366	600 955
1986	2 004 889	18 485	1 359 173	627 231
1987	2 107 469	18 748	1 432 577	656 144

Figure A.3: Road vehicles in operation by category (1975-1987)

	s h i p s	t r u c k s	r a i l w a y	p l a n e
ALL GOODS				
Imports	87.5%	10.1%	2.3%	0.1%
Exports	91.6%	6.5%	1.7%	0.2%
Total	89.3%	8.5%	2.1%	0.1%
ALL GOODS EXCEPT MINERALS AND FUEL				
Imports	77.2%	16.4%	6.2%	0.2%
Exports	90.4%	7.5%	1.9%	0.2%
Total	85.6%	10.7%	3.5%	0.2%

Figure A.4: Greek Imports-Exports. Choice of Transport Mode (1985)

y e a r	Passenger-km in inter-urban lines (thousands)	Buses operating in inter-urban lines	Passengers Transported (thousands)	Kilometres Ran (thousands)
1975	4 749 751	3 440	184 810	
1976	4 766 203	3 460	191 018	300 274
1977	4 957 127	3 480	194 140	307 654
1978	5 200 199	3 531	194 346	306 975
1979	5 782 572	3 604	187 414	309 843
1980	5 817 693	3 677	177 228	305 002
1981	5 788 342	3 862	174 073	307 807
1982	5 915 894	3 910	165 750	311 940
1983	5 424 783	3 886	151 332	289 748
1984	5 673 748	3 880	162 928	304 803
1985	5 788 611	3 872	164 591	298 223
1986	5 006 898	3 871	161 134	292 294
1987	4 812 442	3 861	153 236	288 464

Figure A.5: Volume of road passenger traffic (1976-1987)

P o r t s	1979	1980	1981	1982	1983	1984	1985
Volos	3 502	3 444	3 639	3 713	3 757	3 998	5 089
Eleusis	14 154	15 525	16 167	16 735	14 733	10 114	11 340
Thessaloniki	6 092	5 210	5 011	4 774	5 473	5 851	6 441
Kavala	870	872	782	1 121	1 234	1 386	1 528
Megara	1 494	2 575	3 294	4 331	4 097	3 853	4 346
Patras	6 281	6 882	5 410	5 658	5 020	4 914	3 752
Pireaus	27 118	26 255	24 142	25 259	26 560	27 092	29 778

Figure A.6: Ships' arrivals in selected ports (thousands net registered tonnes, 1979-1985)

	P a s s e n g e r s			Passenger km (1000s)	F r e i g h t (tons)		
	Total	Embarked	Disem- barked		Total	Loaded	Unloaded
Athens-Alex/polis-Athens	183 464	94 255	89 209	69 532	933	610	323
Athens-Thessaloniki-Athens	865 813	432 422	433 391	258 013	12 284	8 057	4 227
Athens-Kavala-Athens	123 007	62 468	60 539	42 314	573	346	227
Athens-Larisa-Athens	3 190	1 644	1 546	714	15	6	9

Figure A.7: Air Traffic in Selected Lines (1986)

Finally, **Figure A.7** illustrates the air traffic at selected lines parallel to the railway axis. As deriving from the European experience, these lines will be mostly affected by the development of high-speed railway lines; thus, their size indicates the existing demand for this type of services (pricing also is to be considered). Source of the data presented in these figures is the National Statistical Service of Greece (ESYE, 1986).

A.5. THE COMPONENTS OF THE GREEK RAILWAY

A.5.1. The Track and Related Functions

The functions of construction and maintenance of permanent way and structures are generally referred to as engineering. Their purpose is to provide the facilities on which the railway operates as a supply or service activity. This includes initial construction, ongoing maintenance, and improvements or betterments of the physical plant of the railway.

The engineering function of the railways is more or less unique within the transportation companies. Railways are the only mode that traditionally have provided their own guide paths. On the contrary highways used by truck lines and private cars are constructed and maintained from general tax and specific user-tax revenues, and the airlines make use of State-operated and maintained airports.

The role of the engineering function and the engineering officers is central when the railway is in a stage of development that puts an emphasis on tasks such as construction

of new lines, doubling or improvement of existing ones. Activities designated as improvement projects usually include installation of new or improved signals, electrification, improving level crossings by the installation of automatic signalling or construction of bridges, or upgrading track to higher standards (such as changing to heavier rail, changing from jointed or bolted rail to welded rail), straightening road-beds to reduce curvature. As part of the activities just described, the railway has substantial procurement and subcontracting activities. The purchases of ballast, ties, and rails are in themselves a major activity which in the Greek Railway is not closely related, in the organizational chart, with the engineering function, but forms a separate function in the Procurements and Stock Department.

The engineering function is organised along the following three lines (**Act 674/70**):

- (a) A Permanent Way Department headed by a civil engineer is responsible for creating design work, for setting specifications and standards for safe operations, and advisory activities.
- (b) Permanent Way Divisions belonging to the three Regional Departments execute all the activities related with projects concerning either construction or maintenance.
- (c) A New Projects Department is responsible for the technical projects related to the modernization plan, projects that are mainly related to road-bed design as well as to bridges and tunnels design and to supervision of these works after subcontracting.

The railway line has a linear form; only in some sections in Peloponnese and Thessaly regions emulates the form of a network. In its largest part it is single-tracked. It has already been doubled in the following sections: Athens-Inoi (61 km), Inoi-Tithorea (95 km), Domokos-Larisa (60 km), Platy-Thessaloniki (38 km) and Athens-Elefsis (22.5 km). The second and third sections concern implementation works of the modernization plan while the remaining ones had been already completed when the plan was initiated. **Figure A.8** summarizes some of the main characteristics of the railway line.

Concerning the railway line, the Greek network has two basic unfavourable characteristics. The first one as illustrated in **Figure A.8**, is that the one third of its lines is narrow-gauged; in this category belong, the whole Peloponnese network as well as the bigger part of the Thessaly railway line (except for the section Volos-Larissa). The second one is that the tracing of the line is by and large mountainous with small curvature and big gradients. Though the modernization works in the Athens-Thessaloniki line being already undertaken (with the construction of a second track, and the upgrading of the existing one) have increased the maximum speeds on several sections of the network, the final operational has not yet reached the anticipated speed

of 200 km/h. **Figure A.9** depicts the maximum and average speeds allowed over the network under the present conditions (OSE, 1990b).

Width of the Railway Line (mm)	Athens Region (D.P.A.) (km)	Thessaloniki Region (D.P.Th.) (km)	Peloponnese Region (D.P.P.) (km)	Network Total	
				km	%
Standard (1453)	585	980	-	1 565	63
Narrow (1000)	162	-	730	892	36
Narrow (750)	-	-	22	22	1
Total	747	980	752	2 479	100

Figure A.8: Principal Characteristics of the Greek railway network

Principal Sections of the Line	Speed (km/h)	
	Maximum	Average
Patras-Athens	90	53
Athens-Thessaloniki	120 (160)	65
Thessaloniki-Alexandroupolis	100	55

Note: The value in parenthesis indicates the speed reached at the improved sections with new rolling stock, recently.

Figure A.9: Speed Levels in Principal sections of the Network

A.5.2. The Rolling Stock and Maintenance of Equipment

Apart from track maintenance, the other part of the maintenance function is equipment, the fleet of locomotives, coaches and wagons. Rolling stock repair and maintenance work is undertaken in the network's workshops and depots. Greek Railways have assigned locomotives to specific workshops. Thus, heavy repair and maintenance work for

standard-gauge trains originating from Athens and the bigger part of Peloponnese narrow-gauge locomotives is undertaken in the network's biggest workshop in Piraeus. In Thessaloniki, the major shop work is performed at a local workshop which serves the trains that originate from there and are directed either eastwards to Alexandroupolis or westwards to Kozani and Florina. Finally a small workshop in Volos serves the locomotives for the narrow-gauge trains operating in the Thessaly network, and the machinery for track maintenance.

Locomotives are inspected and serviced daily in the network's three major depots: (1) Aghios Ioannis depot near Pireaus serves the Athens originating standard-gauge trains; (2) Piraeus depot serves the Athens originating Peloponnese network trains; and (3) Thessaloniki depot serves the trains originating at Thessaloniki. Smaller depots can be found in other locations too, with responsibilities over branch-lines trains maintenance and servicing.

Most maintenance operations are measured by equipment availability and percentage of equipment in "*bad-order*" condition. However, the Equipment Maintenance Department does not possess substantial inventories of supplies and parts necessary to support maintenance and repairs. Purchases are organized centrally by the Procurement and Stock Department while purchases of the Public Investment Programme are subject to the Trade Ministry approval, a process that is time consuming and complicated since the legal procedures that have to be followed are usually very long. It is not unusual for a purchase to extend over a period of years. The acquisition in 1989 of 20 locomotives from Germany and Yugoslavia was the result of a process that was initiated in 1985.

Training in this area is primarily performed on an on-the-job, apprentice-master basis. Some specialized training is also provided by equipment suppliers, especially locomotive manufacturers. **Figures A.10-A.13** set out information on the number of rolling stock units of the Greek Railways. **Figure A.10** provides information for a specific year (1987) on the number and type of diesel and diesel electric locomotives while **Figure A.11** provides the same type of information for the diesel multiple units (rail-cars). **Figure A.12** depicts all rolling stock units over a time span of ten years, either they are in operation or under repair. Finally, **Figure A.13** gives details on rolling stock units ordered through the big contract 294/83 which aims at renewing this major component of the railway system.

As seen in the above tables, railway equipment has a long life. Under normal maintenance, locomotives may have an economic life span of 20 to 30 years whilst cars have even longer lives of 30 to 40 years. Though this holds true mostly when preventative maintenance programs are involved, the conditions that the enterprise faces are quite constraining (with the shortage of spare parts, the multiplicity of rolling stock units, the

delay of deliveries since the time of the expressed need to purchase) that the poor ratio of the production of the rolling stock maintenance/repair system does not seem very striking (Paradissopoulos, 1990).

Type	serial no.	construction	year	HP	units	% out of service
standard gauge						
KRUPP V60	A.100	FR GERMANY	1963	650	30	33.0
ALCO	A.200	U.S.A.	1963	1 050	8	31.2
ALCO	A.300	U.S.A.	1964	1 950	8	45.0
ALCO	A.320	U.S.A.	1966	2 150	6	46.7
ALSTHOM	A.350	FRANCE	1967	2 400	26	62.7
SIEMENS	A.400	FR GERMANY	1966	2 000	10	94.0
FAUR	A.150	ROMANIA	1973	700	12	100.0
FAUR	A.170	ROMANIA	1979	750	7	84.7
MLW	A.450	CANADA	1974	2 700	20	32.6
MLW	A.500	CANADA	1975	3 600	10	46.0
GENERAL ELECTRIC	A.220	U.S.A.	1974	1 050	13	80.0
ELECTROPUTTERE	A.550	ROMANIA	1982	3 600	10	41.0
GANZ-MAVAC	A.250	HUNGARY	1983	1 800	11	22.7
1.0 m gauge						
ALCO	9.100	U.S.A.	1965	1 350	12	31.6
ALSTHOM	9.200	FRANCE	1967	1 600	10	56.0
MITSUBISHI	9.400	JAPAN	1967	640	20	24.5

Figure A.10: OSE, 1987: Diesel and Diesel Electric Locomotives

Type	serial no.	construction	year	HP	units	% out of service
standard gauge						
FIAT	11-26	ITALY	1949	650	30	33.0
FIAT	27-36	ITALY	1957	1 050	8	31.2
FERROSTAHL	71-90	FR GERMANY	1962	1 950	8	45.0
GANZ-MAVAC	91-101	HUNGARY	1976	2 150	6	46.7
1.0 m gauge						
BREDA	2 500	ITALY	1952	390	13	83.0
MAN	2 100	FR GERMANY	1937	201	6	70.0
MAN	4 200	FR GERMANY	1937	420	7	91.4
DE DRIETRICH	6 400	FRANCE	1952	640	13	50.0
ESSLINGEN	6 000	FR GERMANY	1959	1 000	7	45.7
GANZ-MAVAC	6 450	HUNGARY	1977	1 140	4	45.0
GANZ-MAVAC		HUNGARY	1985	1 140	11	00.0
750 mm gauge						
BILLARD	3 000	FRANCE	1959	350	3	25.0
DE CAUVILLE	3 000	FRANCE	1967	500	3	25.0

Figure A.11: Greek Railways, 1987: Diesel Multiple Units

Y e a r	In Operation				In Stock or Under Repair			
	Passenger coaches	Wagons	Buses	Trucks	Passenger Coaches	Wagons	Buses	Trucks
1980	365	10 903	45	155	85	379	9	23
1981	363	11 057	117	170	105	220	11	18
1982	367	10 289	109	185	100	986	19	8
1983	385	9 838	122	212	85	1 093	24	8
1984	373	9 023	123	211	96	2 019	23	9
1985	339	9 501	90	97	129	1 090	56	117
1986	438	8 283	83	114	29	2 478	44	61
1987	433	7 975	98	112	34	2 610	41	63
1988	436	8 082	112	113	34	2 610	32	62
1989	347	7 978	106	114	165	2 857	38	61

Figure A.12: Greek Railways: Other Rolling Stock Units

T y p e	country	manufacturer	year	motive power	units	max. speed (km/h)
standard gauge						
1. Suburban Multiple Units Vehicles	W.Germany/ Greece	MAN/ GREEK SHIPYARDS	1989	diesel	25	120
2. Intercity Quadruple Trains	East Germany	SF/A.E.G./SIEMENS	1989	diesel/ electric	12	160
1.00 gauge						
1. Twin Multiple Units Vehicles	W.Germany/ Greece	MAN/ GREEK SHIPYARDS	1990	diesel	10	100
2. Triple Intercity Multiple Units	W.Germany/ Greece	MAN/ GREEK SHIPYARDS	1992	diesel	10	120

Figure A.13: OSE: Rolling Stock Concerning the 294/83 Contract

A.5.3. The Personnel

Labour has been by far the most important among the broad categories of the company's inputs. It has amounted to some two thirds of operating expenses and is double the amount of railways revenues (OSE, Annual Report 1987). The legal position of the enterprise's employees differs partly from what is known in the administration (civil servants). Typical features of this status are life-long appointment, remuneration granted on the basis of laws (not on salary agreements) though recently the first salary agreement was signed between the management and the trade unions.

Despite the overwhelming impact of labour wages on the company's expenditure and the technological environment that was providing increasing opportunities for the reduction of labour (machinery for track laying and maintenance, automatic signalling, level crossings elimination and automatic crossing protection e.t.c.), the Greek Railways have not diminished this kind of workforce. Figure A.14 shows that in the years 1984 and 1985 increased employment occurred. This was due to (1) increased establishment to compensate for a reduction in working hours (from 48 hours/week to 40 hours/week in the 1st of October 1983); (2) the introduction of the 5-day working week apart from the headquarters personnel for all the enterprise's employees; and (3) since May 1982, the paid holidays were 22 days per year on the completion of one-year full time employment. Until then this was realizable in about ten years after the beginning of the employment.

personnel	y e a r											
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
1. permanent												
administrtn	1 383	1 355	1 325	1 310	1 287	1 234	1 238	1 226	1 180	1 184	1 171	1 322
operations	2 951	3 011	2 904	2 851	2 980	2 873	2 775	4 074	3 926	3 848	3 811	3 675
roll.stock	3 225	2 849	3 055	2 791	2 859	3 039	3 237	3 695	3 659	4 028	4 252	4 313
perm.way	3 394	3 301	3 169	3 085	2 995	2 974	2 779	3 062	3 244	3 328	3 496	3 396
other oprtn	330	589	350	565	345	356	313	335	350	346	323	375
perm. total	11 313	11 105	10 803	10 602	10 466	10 476	10 342	12 392	12 359	12 734	13 053	13 081
2. seasonal	1 670	1 367	1 337	1 516	1 400	1 708	3 074	2 669	2 237	1 791	1 156	889
total	12 983	12 472	12 140	12 118	11 866	12 184	13 416	15 061	14 596	14 525	14 209	13 970

Figure A.14: Greek Railways: Staff Employed (1978-1989)

As technological change strengthened its pace, the company initiated training programs for its personnel. **Figure A.15** provides the numbers of employees per type of occupational class trained from 1981 to 1987. It appears that technical training was the target of these efforts since no other areas of interest are depicted on the Table.

A.5.4. Management

The design of an appropriate managerial structure was at stake since the last decade, when the modernization plan was initiated. The Greek Railways originally viewed their primary task as management of large-scale construction projects. In most respects this was a derivative of the high status and authority the professional engineers enjoyed within the company. It is not irrelevant that all General Managers chosen by the State were themselves engineers too. Engineers were also the majority of the Assistant General Managers (3 out of 4) and of the Heads of Departments (11 out of 19). This was not to be easily confronted by the other occupational classes in the organization, since the whole country was in a development phase, where construction was a major component, and the role of the engineer was central and decisive (Paradissopoulos, 1989).

personnel	y e a r													
	1 9 8 1		1 9 8 2		1 9 8 3		1 9 8 4		1 9 8 5		1 9 8 6		1 9 8 7	
	in com- pany	a- broad	in com- pany	a- broad	in com- pany	a- broad	in com- pany	a- broad	in com- pany	a- broad	in com- pany	a- broad	in com- pany	a- broad
professnl engineers				12		13		21	59		56			
locos' mechanics			268		250		241							
track mntn ance staff			15		107		73		53		41		40	
engine drivers			83				461		105		81		53	
sttmsters switchmen					109		1432		123		55		47	
other	352		250											

Figure A.15: Greek Railways: Personnel Trained (1981-1987)

As the financial situation of the enterprise was getting worse, the engineers were found to fall short in ability to manage operations. They were often accused of being incompetent to manage the commercial activities of the enterprise which were vital because of the intense inter-modal competition and the continuing loss of market share, especially in the freight sector.

The engineers themselves, though they recognized that a negative climate against them had been formed within the company, rejected these accusations and claimed that the difficult position of the Greek Railways was primarily due to the inadequate funding (for over a 35-year period) which stemmed from political decisions. Every year the requested funding was cut by 50% at least, and this affected the efforts to alter the enterprise's fortunes. Moreover, they argued that there was a "*myth*" that the engineers were the "*employers*" or "*the company's status quo*". Top management (the General Manager and his Assistants) made all important decisions, most of the times in spite of the office holders' introductory accounts, and engineers took the blame because a scapegoat had to be found, to be the target of the personnel's disappointment (TEE, 1989).

While these two opposing views were widely diffused in the organization and created polarity among the various occupational groups, the two following points should be stressed to help clarify the situation:

(1) In civil engineering works (construction works, earth moving, e.t.c.) the allowable deviations are of centimetres range whereas in the construction of high speed railway line are

of millimetres range. It is questionable whether the Greek railway engineers possess such detailed knowledge and experience, since in the Greek Technical Universities Railway Engineering is not a fully developed course. Therefore, superior technical knowledge that in other circumstances would justify assignment of management posts to engineers is not present nowadays.

(2) The need to proceed with a quicker pace to the completion of the construction phase of the modernization plan was generally acknowledged. However, operations (with a greater emphasis in the commercial function-selling, pricing, customer services, market research and development, advertising and promotion) should develop in parallel. The success of the introduction of new passenger services in 1988 between Athens-Thessaloniki and Athens-Kalamata, on exclusively couchette-cars and sleeping-cars in night journeys pin-pointed to this need. Customers return to the railway when the services offered meet their needs.

The trend to balance construction with operations begun with the advent of a new General Manager in summer of 1988. Though his tenure in office was short (he resigned in June 1989 when the government that appointed him lost the electoral battle) he introduced major changes in the timetables. As a consequence, intercity services every hour were initiated covering all big cities on the Athens to Thessaloniki main line. He also reorganized the bus services (owned by the company) so as the departure times of trains and buses would not coincide. Despite him being too an engineer, he introduced to the organization a strong market orientation emphasizing the importance of the quality of services to be offered (TEE, 1989).

The challenge of managing the geographical dispersion and complexity of a co-ordinated operation is as great as the financial challenge to cope with the big deficits and the inadequacy of funding. The following section highlights the steps taken to structure the organization in an appropriate way, serving its present phase of development and contributing to the accomplishment of its strategic plan.

A.5.5. Organizational Structure

The newly founded, in 1970, autonomous railway enterprise (O.S.E.) was organized according to proposals made by the French consultancy company Sofrerail. The structure that Sofrerail proposed was similar to that of the French Railways, and as it was already described in the first section of this appendix, the most significant changes concerned: (1) an increase in the manpower of the headquarter units; (2) the recognition of the significance of the commercial function of the enterprise; (3) the creation of a new department responsible for long-term planning; and (4) the retention of the decentralized organization of S.E.K. (three regional departments) which was *"fully compatible with the physical layout of the network and corresponds to distinct geographical units, having specific characteristics regarding the transport economy in the country"* (OECD, 1966).

Figure A.16 shows the organizational chart of the enterprise implementing the above concepts. This type of organization integrated all operating departments (maintenance of equipment, maintenance of way and structures, and transportation) on a regional (or geographical divisional basis) while the same functions retained the departmental relationship. Thus, for example, the regional maintenance-of-way officer was responsible to the regional manager for repair and structures, but received staff direction in matters pertaining to standards and practices from the chief officer of maintenance of way and structures. In a similar way other similar operating officers had line responsibility to the regional manager and staff relationships to their respective chief officers.

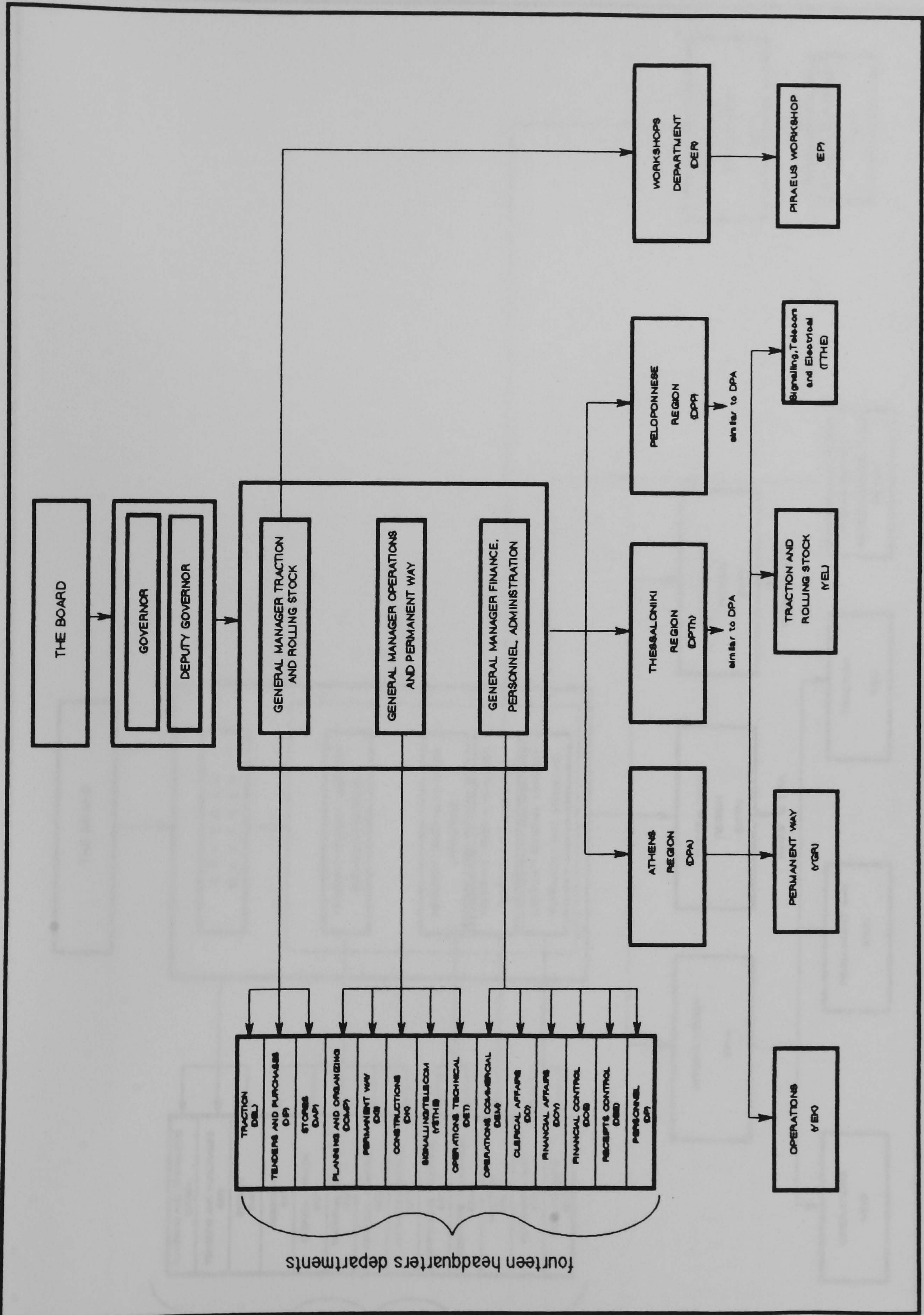


Figure A.16: Organizational Structure of Greek Railways, 1980

thirteen headquarters departments

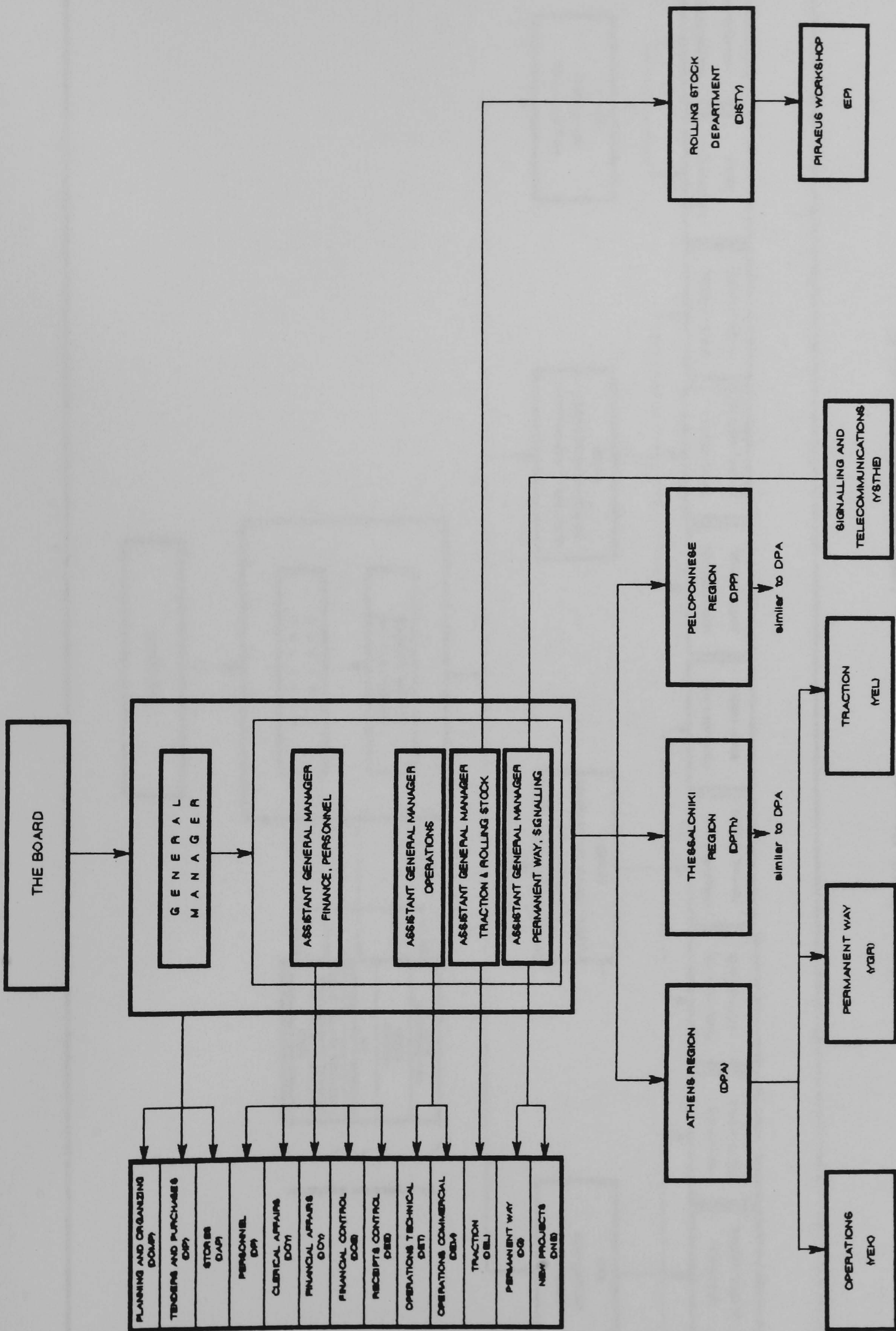


Figure A.17: Organizational Structure of Greek Railways, 1988

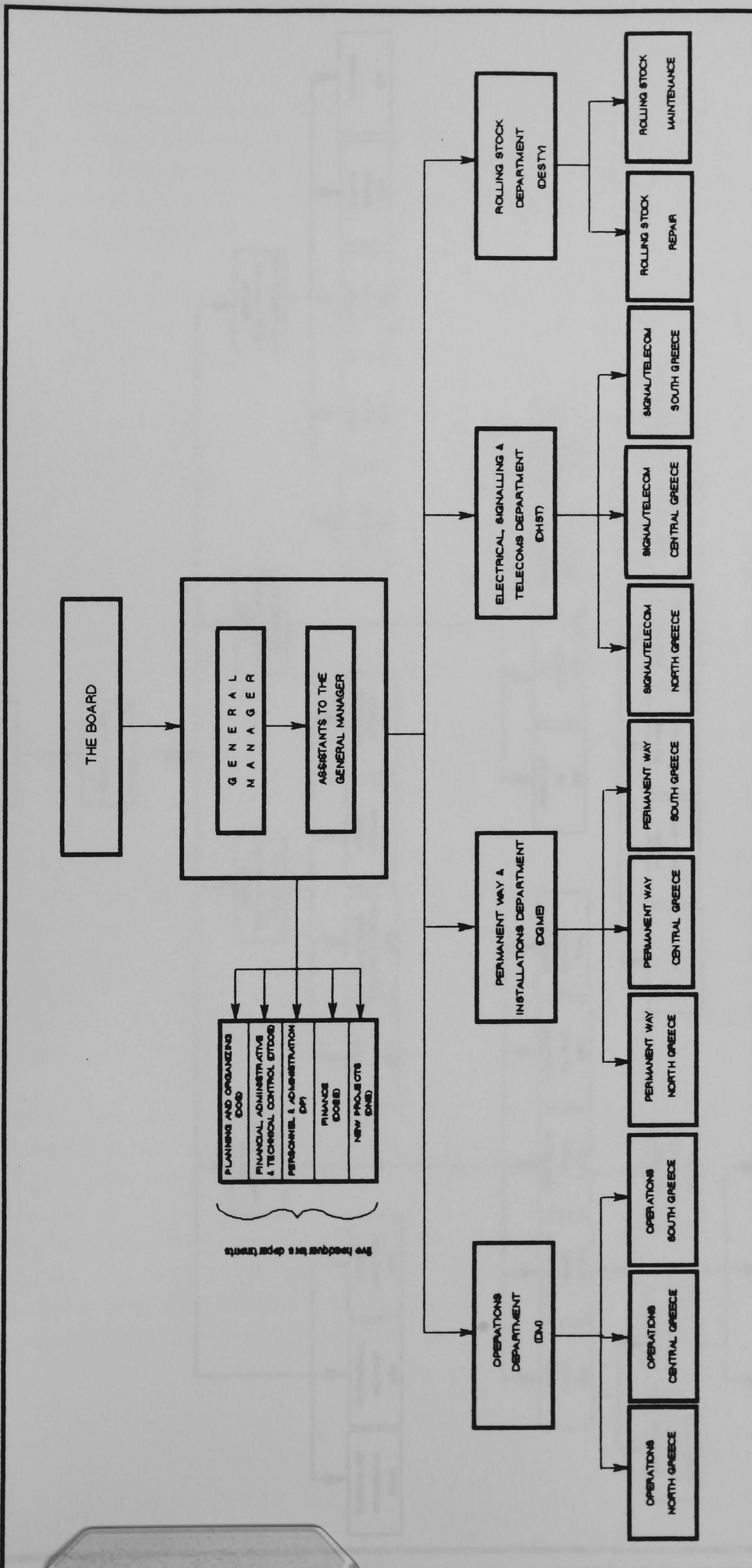


Figure A.18: Structure proposed in 1988 (not implemented)

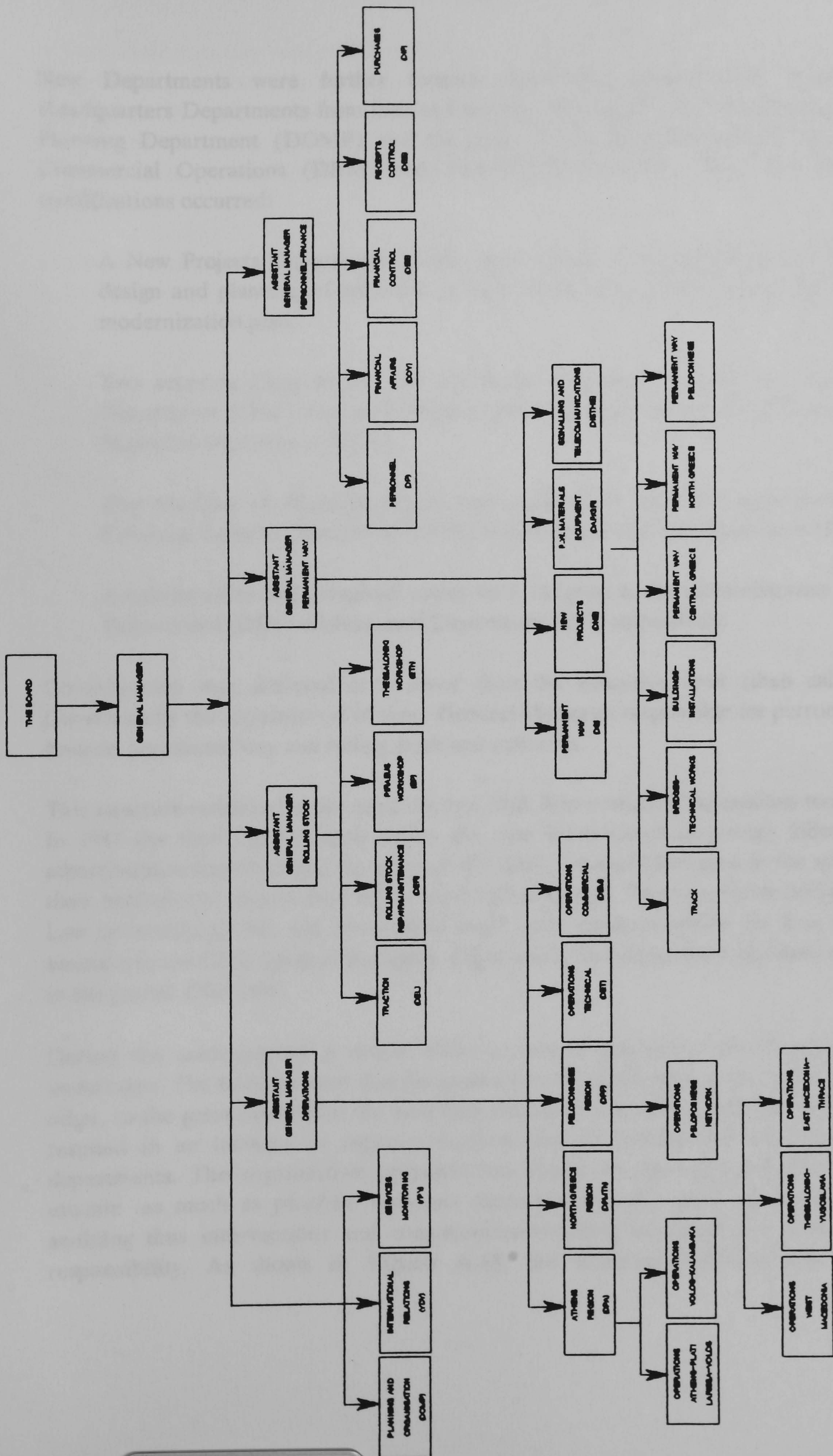


Figure A.19: Structure implemented in 1989

New Departments were further formed, increasing gradually the number of Headquarters Departments from four to fourteen. Thus, apart from the creation of the Planning Department (DOMP) and the split of the Operations Department into Commercial Operations (DEM) and Technical Operations (DET), the following modifications occurred:

A New Projects Department (DNE) was created with responsibilities over the design and planning of technical projects concerning the implementation of the modernization plan.

Two separate Departments, the Purchases Department (DIP) and the Stores Department (DAP) took over responsibility for materials from the Traction and Materials Department (DEL).

The handling of financial affairs was assigned to two new departments; the Financial Control Department (DOE) and Receipts Control Department (DEE).

Administration and personnel issues were assigned to the Administrative Affairs Department (DD) and Personnel Department (DP) respectively.

Co-ordination was achieved at a lower than the executive level (then called the Governor) by the appointment of three General Managers responsible for personnel and finance, permanent way and rolling stock and materials.

This structure remained active until the late 1988. However, small alterations took place. In 1981 the then CEO (appointed by the new Government in power) following an administrative law abolished the posts of the three General Managers, in the spirit that their holders were proponents of the old political system. Five years later Socialization Law re-introduced this top hierarchical level and made provision for four posts of assistant to the CEO General Managers. **Figure A.17** illustrates the organizational chart in the period 1986-1988.

During the same period, a major effort to overall reorganize the enterprise was undertaken. The working team that designed the new organization, pointed out, amongst other, to the great power that the staff departments had acquired over the years which resulted in an increase in bureaucratization and an indifference towards the line departments. The organization proposed was based on departmental units able to execute -as much as possible- activities concerning specific goals of the enterprise, avoiding thus interventions and competencies resulting in delays and reductions in responsibility. As shown in **Figure A.18**, the structure proposed was a strict

departmental structure where line authority was flowing from the chief officer of a functional department directly to the field group without significant integration with other departments at less-than-the-executive level. The creation of the Operations Department (the most important in competencies and biggest in size) with marketing responsibilities too was an attempt to take out of the shadow the commercial functions of the company.

The above described organizational structure was never implemented. Though it passed from the Managing Board, on its way to the final approval it was blocked by the Supreme Court. A section of **Appendix B** provides a detailed picture of the arguments used. It should be noted here that the trade unions opposed strongly to it, fearing that the power structure within the organization would alter significantly. The employees' representatives debated that the new proposal, completely prepared by "*technocrats*", was in reality a strongly centralised scheme couched with decentralisation arguments (M.N.O., 1987). The trade unions used several legal arguments to prevent its implementation, thing that at the end was achieved.

The new General Manager that took office in the Summer of 1988 proceeded to some alterations of the existing organizational structure which still was the one proposed by Sofrerail. Because these were alterations and not a major rearrangement, ministerial approval was not needed. The new structure designed by the General Manager was implemented immediately after its approval by the Managing Board. **Figure A.19** depicts it.

However, the period over which the organization operated under the new scheme did not exceed one year. In June 1989, the new elections brought a new political party in power and the appointed new General Manager altered again the organizational structure back to its old and known form.

A.6. THE PERFORMANCE OF THE ENTERPRISE

A.6.1. The Passenger Market

There does not seem to be a clear policy with regard to the development of passenger services, apart from the desired development of high-speed passenger services in a yet unknown time horizon. Between some cities, regular hourly express services exist. However, the extension of this kind of services is considered to be constrained by the limited infrastructure capacity and the rolling stock availability.

As far as suburban services are concerned, they simply do not exist and the organization lacks any planning to develop them in the near future. Thus, a potential source of revenue is lost and rail transport corridors traversing high density suburban areas are left unexploited.

As far as local and rural services are concerned there is a general predisposition to maintain the existing levels of service but little evidence exists for the adoption of commercial or operating strategies designed to meet the customers' new demands. For the past decade, there have been few changes in timetables and rare initiatives to introduce new services.

Passenger fares are determined by the State. Though every year the enterprise requests a certain fare level increase at least equal to the inflation rate, usually the increase approved falls well below it. Thus, over the years the price of passenger services falls consistently, in real price terms.

A.6.2. The Freight Market

There is no policy in the Greek Railways to develop specific categories of freight traffic, such as full-train-load traffic, containerization of shipment and so forth. What exists is the company's discretion to grant discounts on the total level of traffic consigned by one customer. This of course does not help the company to distinguish preferred traffic and commit to the development of policies that would target economically more attractive types of traffic.

Freight takes second place to passenger traffic. Train loads and speeds are severely limited by the load-bearing characteristics of the track's subgrade and structure and of some bridges. Maximum speeds for freight services do not exceed 80 km/h. Furthermore, the following characteristics inhibit the placement of stronger interest in developing the freight market:

- (1) The geographical position of the country does not generate transit traffic. The proportion of freight transit transport is 17% of the overall freight transport whereas in central European countries this represents a percentage from 25.66% in Austria to 47.3% in Switzerland. (in 1981). However, this trend was reversed in 1985 where the transit traffic exceeded the 43% of the overall traffic (OSE, **Annual Report 1983**). This was primarily due to a contract signed between Greece and Yugoslavia for fuel transport from the port of Thessaloniki to the Greek-Yugoslavian border and to the parallel reduction of inland transport due to a shift of major shippers (mainly state-owned enterprises) to other carriers.

(2) The great length of coasts and the existence of organized port facilities renders competition with ship very intense, and usually ship wins out because of the lower tariffs offered when, of course, the duration of the journey is not considered as very important.

(3) The majority of minerals of the country are not appropriate for massive railway transport, and the ones that are, are usually transported by ship since mines are located by the sea (bauxite mines).

(4) The perishable agricultural commodities which constitute a considerable part of country's national economy favour the motor carriers because of the flexibility offered (door to door transport) and speed.

Rail maximum rates are defined by the enterprise itself, but the majority of goods carried are on contract or at discount on the published maximum.

Rail freight marketing is achieved with the local station-masters, but in the case of discount rates and long term contract rates, these are determined centrally. When private sidings are requested to provide rail connections with industries, the costs of installation and use are a matter of negotiation between the enterprise and the customer.

A.6.3. The Traffic

Figure A.20 shows the traffic (both passenger and freight) carried by the Greek Railways during a period of 20 years (1970-1989). After a period of continuous decline traffic volume has started increasing slightly since 1985 but nevertheless it still fluctuates around the values of the early 1970s. However, considering the increase in overall traffic in the country over this period, one can easily infer that the market share of the company is steadily decreasing. The company evokes that there are several reasons very difficult to cope with, in the present stage, which lead to this stagnation. Thus,

(1) The single-tracked line (double line now exists in only 270 km, that is 11% of the whole network) causes a considerable increase in journey times because of the need for consecutive train meets (OSE, Annual Report 1987).

(2) The low population density of the country, apart from the two major urban areas of Athens and Thessaloniki, does not generate satisfactory demand at the regions (OSE, Annual Report 1988).

Greek Railways Traffic (1970-1989)

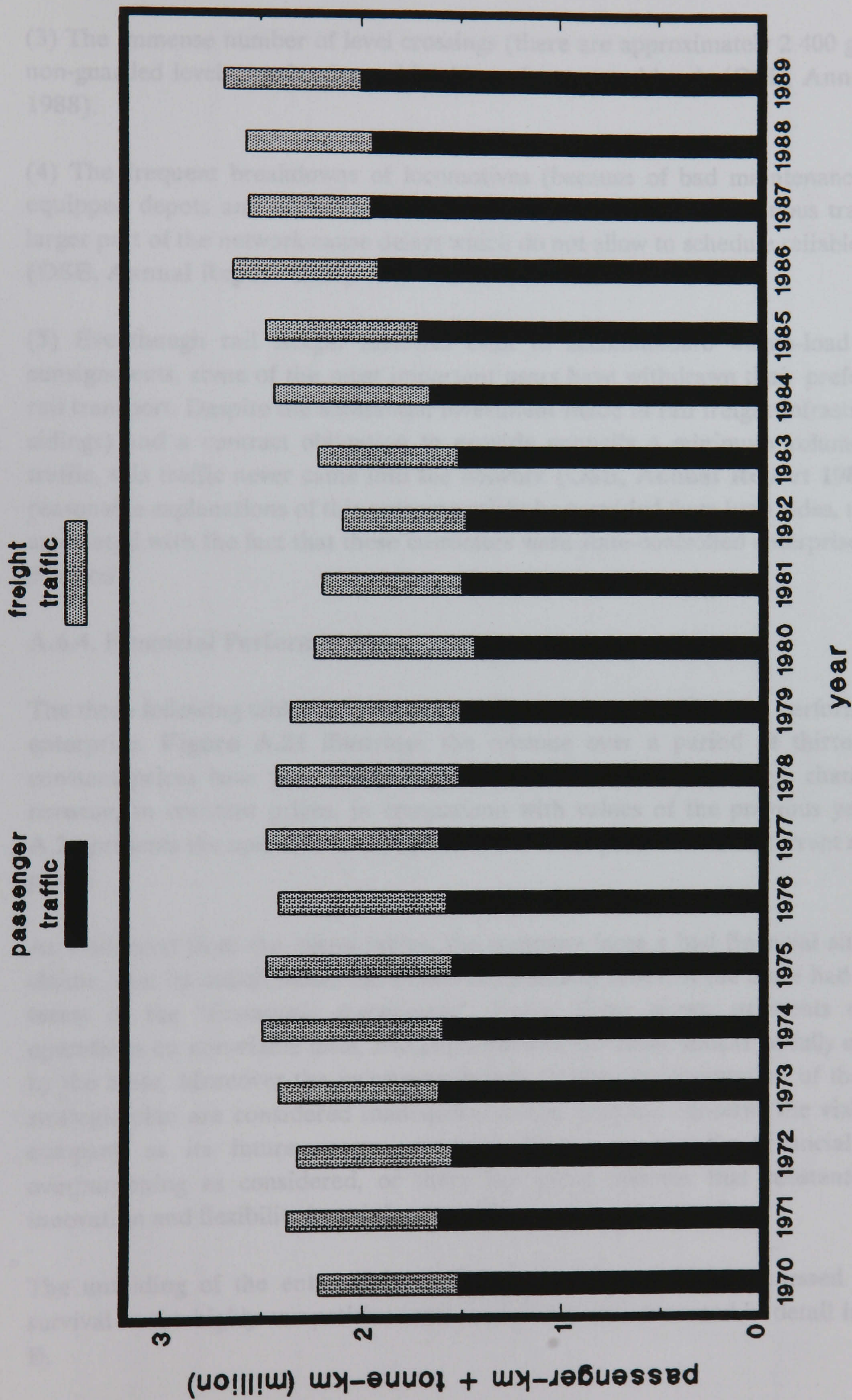


Figure A.20: OSE: Development of traffic volume 1970-1989

(3) The immense number of level crossings (there are approximately 2 400 guarded and non-guarded level crossings) considerably reduces speed levels (OSE, Annual Report 1988).

(4) The frequent breakdowns of locomotives (because of bad maintenance in poorly equipped depots and workshops) in combination with the mountainous tracing of the larger part of the network cause delays which do not allow to schedule reliable timetables (OSE, Annual Report 1988).

(5) Eventhough rail freight facilities exist to accommodate wagon-load or smaller consignments, some of the most important users have withdrawn their preference from rail transport. Despite the substantial investment made in rail freight infrastructure (e.g. sidings) and a contract obligation to provide annually a minimum volume of freight traffic, this traffic never came into the network (OSE, Annual Report 1988). Though reasonable explanations of this outcome might be provided from both sides, the difficulty associated with the fact that these customers were state-controlled enterprises should be stressed

A.6.4. Financial Performance

The three following tables provide some information on the financial performance of the enterprise. **Figure A.21** illustrates the revenue over a period of thirteen years in constant prices base year 1977). **Figure A.22** shows the percentage changes in total revenue, in constant prices, in comparison with values of the previous years. **Figure A.23** presents the operational deficits over the same period in both, current and constant prices.

As evidenced from the above tables, the company faces a bad financial situation and claims that its deficit would have been considerably lower, if the State had fulfilled the terms of the *"Economic Agreement"*. Under these terms, payments of interests, operations on non-viable lines, and imposition of low fares, should be fully compensated by the State. Moreover the investment grants for the implementation of the company's strategic plan are considered inadequate. A key question concerns the viability of the company as its future seems uncertain. Moreover, are the financial factors so overburdening as considered, or there are other features that substantially reduce innovation and flexibility by reinforcing old values and practices?

The unfolding of the enterprise's strategic plan which is being assessed vital for its survival in the highly competitive inter-modal arena, is discussed in detail in **Appendix B**.

total revenue (1977 prices)

million drs.

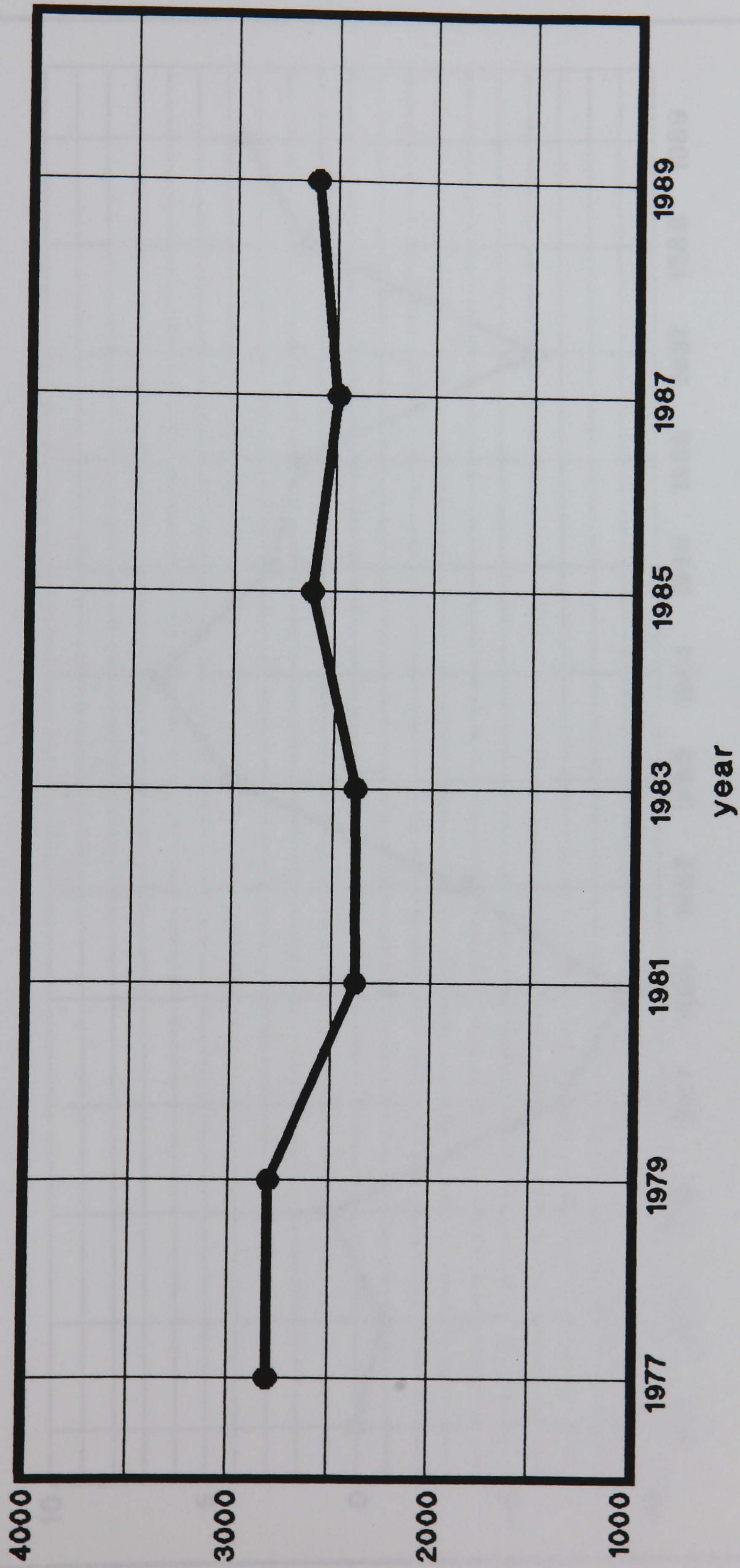


Figure A.21: Financial Performance: Revenue 1971-1989

% changes in total revenue (1977 prices)
comparisons with previous year



Figure A.22: Financial Performance: Changes in Revenue 1971-1989

year	Current prices		Constant prices 1977	
	amount (million drs.)	% change in comparison with previous year	amount (million drs.)	% change in comparison with previous year
1977	1 239	-	1 239	
1978	1 677	+ 35.40	1 382	+ 11.50
1979	1 872	+ 11.60	1 109	- 19.80
1980	2 323	+ 24.10	1 116	+ 0.60
1981	3 224	+ 38.80	1 339	+ 20.00
1982	5 154	+ 59.80	1 646	+ 22.90
1983	6 232	+ 20.90	1 595	- 3.10
1984	7 853	+ 26.00	1 486	- 6.80
1985	11 252	+ 43.30	1 623	+ 9.20
1986	13 946	+ 23.90	1 301	- 19.80
1987	16 909	+ 21.20	1 314	+ 1.00
1988	22 983	+ 35.90	1 746	+ 32.90
1989	26 733	+ 16.30	1 565	- 10.40

Figure A.23: Operational Deficits (1977-1989)

Rail business is a complicated one. Railways are capital intensive and labour intensive companies. They operate in business sectors (and sub-sectors) which have different characteristics and are affected by complex factors which cannot be controlled by the enterprise itself. The State ownership which results in regulation of important aspects of the business and in major interventions in organisational life has to be carefully assessed in relation with the company's financial results and the will to overcome the difficulties and strive for growth.

APPENDIX B

IMPLEMENTING THE STRATEGIC PLAN

B.1. INTRODUCTION

This appendix contains the following:

- (1) A brief outline of the planning efforts that led to the shaping of the long-term development plan, seen by the company as its strategic direction.
- (2) A² description of the short-term (5-year) Rail Plan 1983-87 and its objectives, as well as a definition of the inter-related strategy-areas and an account of the progress concerning its implementation till the time of the study.
- (3) A first evaluation of the plan, based on organizational reports on its progress and on changes introduced in structures and policies, as well as a first attempt to trace internal relations and processes concerning the specific areas of strategic interest.

B.2. THE RAILWAY DEVELOPMENT PLAN

B.2.1. Post-War Planning of the Future of the Greek Railway

B.2.1.1. The Early Stage

According to Efstratiades (1957), an overall plan for the development of the Greek railway network had never existed. He refers to the old Mutrecy (1879) proposal and to the study of Economou (1924), depicted in Figures B.1 and B.2.

However, he argued, the former was just a private proposal for a minimum network limited to the territory of old Greece (i.e. before the Balkan Wars) and the latter, though expanding to all mainland Greece and attempting to tackle the issue systematically, was adopting secondary branch lines. However, neither of these two proposals was ever officially adopted or became a national plan. During this early stage of the Greek Railway, that is from the construction of the first lines up to the World War II, various detailed studies, feasibility studies and proposals were published concerning the construction of railway lines. All these studies and proposals were meant to serve a specific goal which did not derive neither could be assessed in a nationwide context (Efstratiades, 1957).

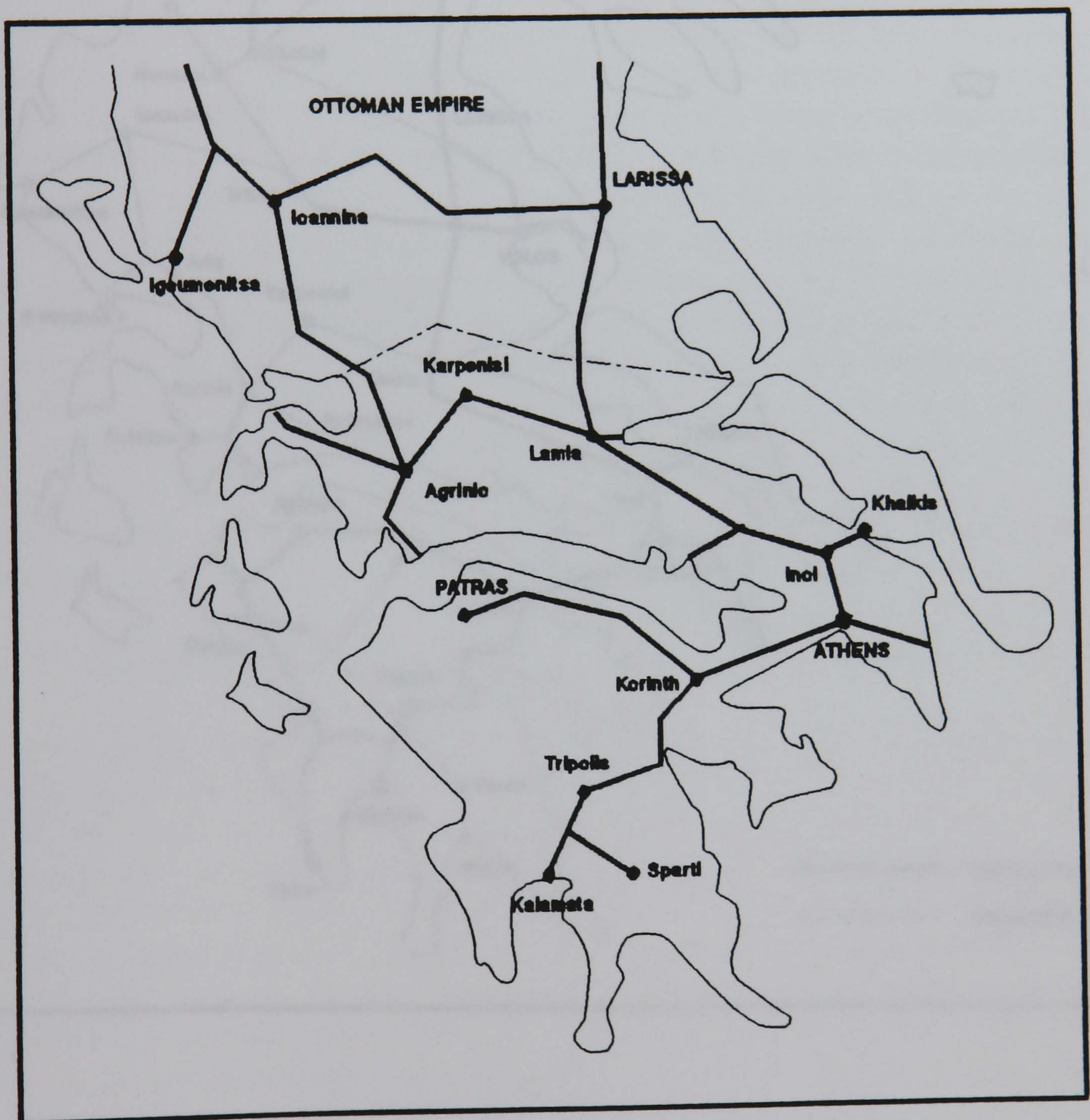


Figure B.1: Proposal for a railway network (Mutreky, 1879)

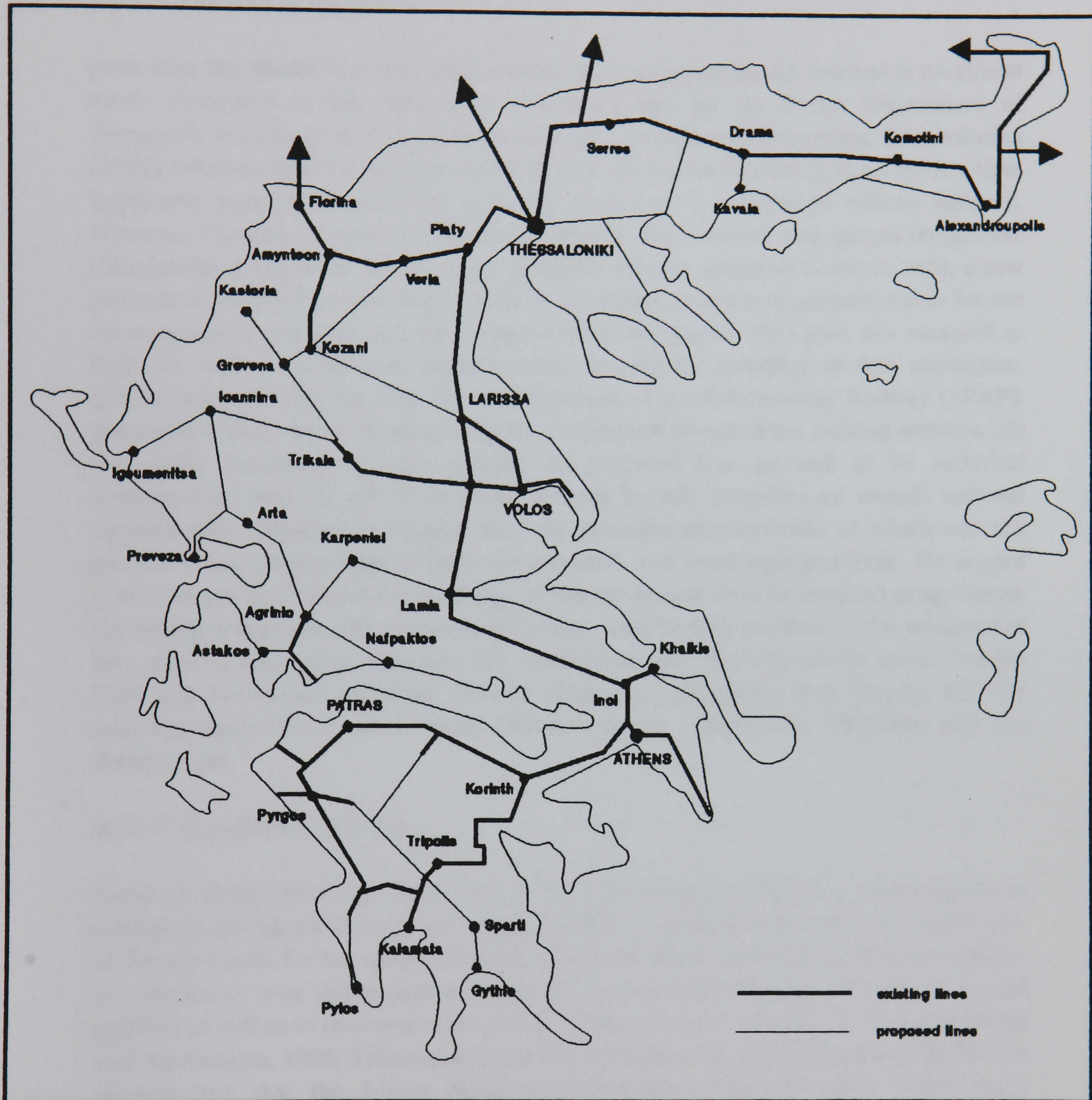


Figure B.2: The Economou (1924) proposal for expansion

B.2.1.2. The End of the War

Soon after the World War II which (as mentioned in **Appendix A**) resulted in an almost totally destroyed railway network, a committee was set up at the Department of Transport, in order to globally examine the issue of railway development. **Efstratiades (1957)** believed that the work produced by this committee was the first up to that time systematic attempt to form and study the details of a nationwide railway network. However, the then government decided to rebuild the network with almost its pre-war characteristics instead of adopting the proposals of the committee. Later, in 1954, a new committee was set up at the Department of Transport, in order to prepare a plan for the construction of new lines and the extension of existing ones. This plan was assumed to form the basis of a national railway policy. During the meetings of this committee, **Efstratiades (1957)**, the then General Manager of the Peloponnese Railway (SPAP), presented a study, which by examining (1) the physical layout of the existing network, (2) the traffic capability of each existing or proposed line as well as its technical configuration, and (3) the track gauge of each branch, proposed an overall national network plan, depicted in **Figure B.3**, the principal characteristic of which was the pursuit of the development of both the standard- and narrow-gauged lines. He argued that there was no reason for converting the narrow-gauged lines to standard-gauged ones. According to his view, rail transport in Greece could be fully handled by the existence of two assisting each other networks, the standard-gauged of which should cover Central-East and North-East mainland Greece (Thessaly, Macedonia and Thrace) and the narrow-gauged should serve West Greece (Epirus, Akarnania), Thessaly, and the Peloponnese.

B.2.1.3. The Automobile Era

However, during the first twenty years of the post-war period, as far as land transport is concerned the State's interest was totally directed towards road transport. Provided that, as already stated, for the railways the decision made was to merely reconstruct to the pre-war condition, over this period the focus of attention were attempts to tackle financial problem as well as to re-examine the overall framework of relations with the State (**Sinis and Andreacos, 1958; Trikoupis, Sinis and Momferatos, 1959; Marinos, 1960**). It is characteristic that the 5-Year National Development Plan 1966-1970, which made provision for highway constructions at a projected expenditure of 16.6 billion drs. (excluding land acquisition) was stating that according to temporary assessment the modernisation and the reorganisation of the railways would require investment of 3.5 billion drs. over the same period. The temporality of the assessment was attributed to the fact that the whole issue of railway development was still under study, carried out in the context of a study of the national transport system undertaken by OECD (**KEPE, 1965**).

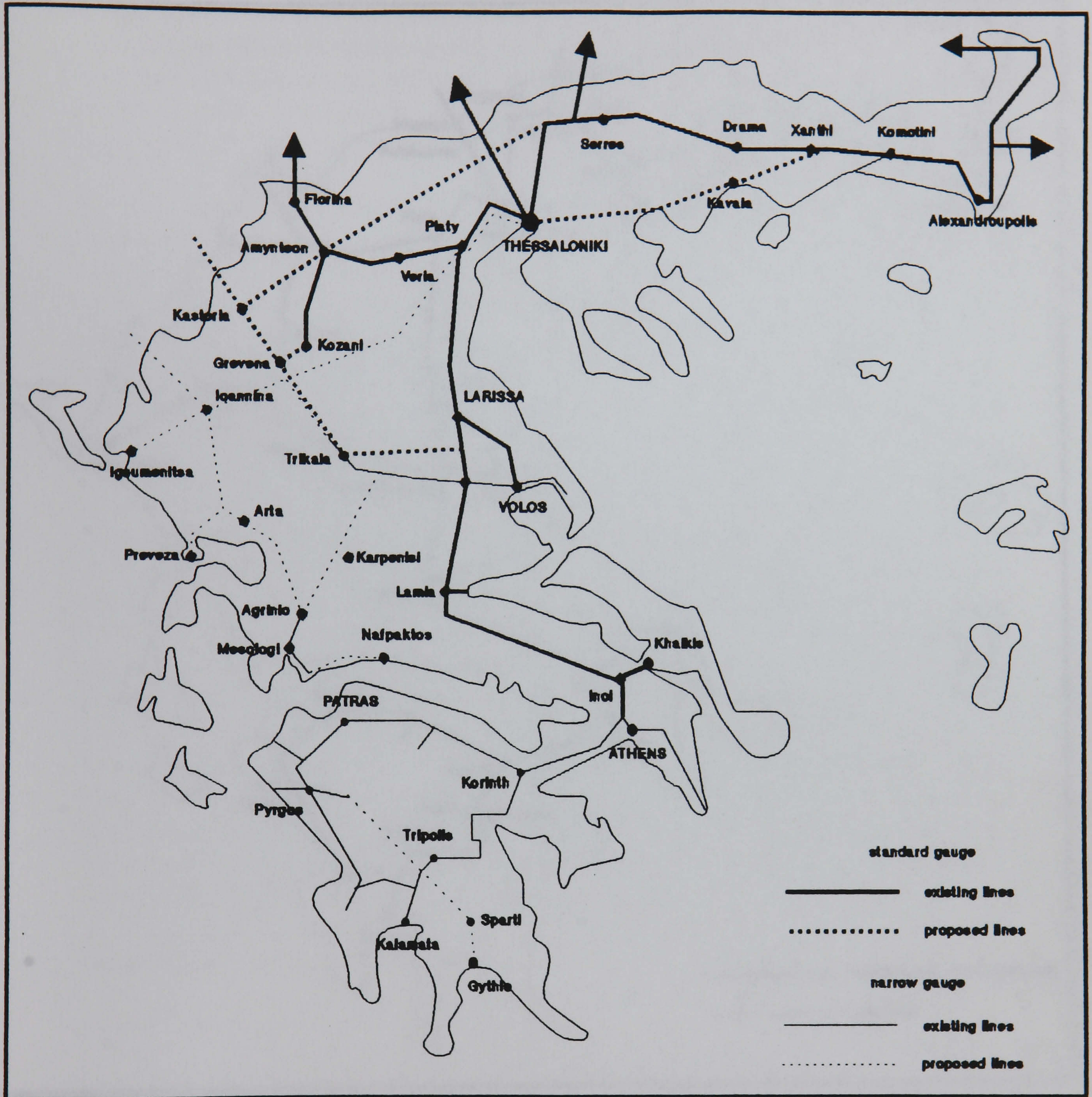


Figure B.3: Proposed layout of the national railway network (Efstratiades, 1957)

The railway part of the OECD study was prepared by Sofrerail, a consultancy subsidiary of the French railway (SNCF). Task of the OECD (1966) study was to prepare a programme along the following two lines: (1) measures to be adopted for the improvement of the capacity, productivity and quality of the services offered by SEK (that is legal matters, rules, regulations, management and organisation methods and techniques, pricing and marketing policy, etc.), and (2) preparation of an investment programme for the modernisation of the fleet and installations, in order to improve productivity and obtain the traffic capacity required in order to meet the future transport demand. The proposals of the OECD (1966) study on these issues briefly were: (1) greater autonomy of the railway from the State-owner; and (2) renewal of the Pireaus to Larissa line, renewal of the North Greece lines, improvements in installations, depots and workshops, and completion of the introduction of diesel traction.

Over the same period, SEK were undertaking the projects of doubling two branches of the Athens to Thessaloniki main line (that is Athens-Inoi and Platy-Thessaloniki) and converting to standard gauge the Larissa to Volos narrow-gauged line. Moreover, steam traction was being gradually replaced by diesel traction; this replacement was completed by 1970 (OSE, 1984). At the mean time, SEK (Greek State's railways) had become a nationwide company by the amalgamation with the ex-private Peloponnese railway (SPAP) and other local railways (SVDE, SPYK). As a result of Sofrerail's proposals, in 1970 SEK were transformed from a Government department into an autonomous organization which *"should function for the pursuit of public interest under commercial criteria"* (Act 674/70). The name of the new company (retained until now) was OSE which stands for Greek Railways Organisation.

Sofrerail was again hired in order to assist in the setting up of the new enterprise. The biggest part of the consultancy's services was completed by 1975 whereas the last French consultants left the country in 1977.

B.2.1.4. The Oil Crisis

The continuing degradation of the national railway network as a result of the delays in making decisions concerning its overall future as well as the first indications of environmental problems in the conurbations (traffic congestion, air pollution) initiated attempts for the formation of a long-term railway development plan. Thus the company, assisted by Sofrerail, prepared a 15-year programme for the modernization and the development of the railways which made provision for a new double line between Athens and Idomeni, allowing for train speeds of 300 km/h. The programme made also provision for a new, double, standard-gauged line between Athens and Patras for speeds of 200 km/h, for the upgrading of the other branches of the network (speeds 150-160 km/h), and for the construction of rail links towards the west coast (Figure B.4).

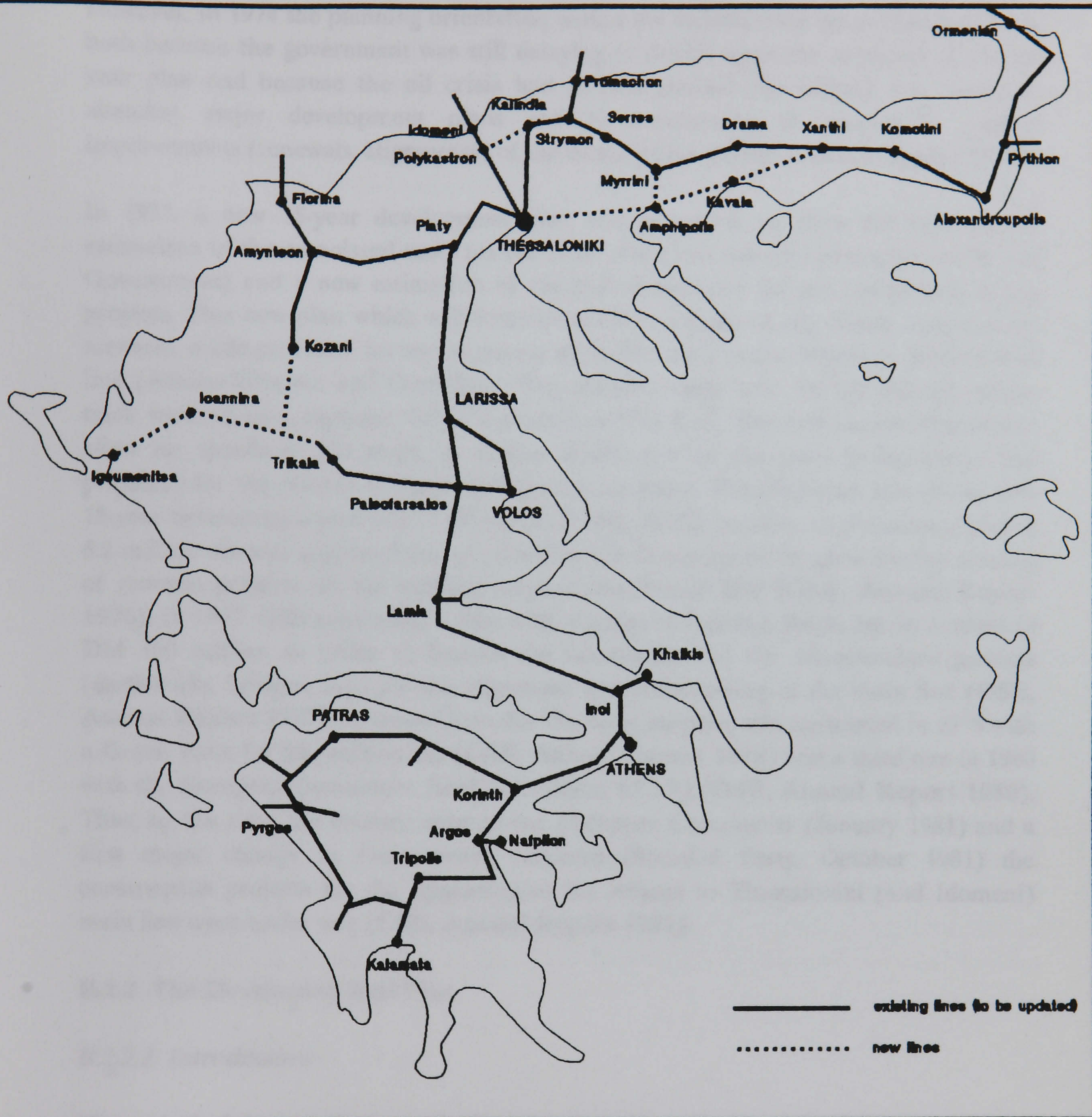


Figure B.4: The long-term development of the railway

The 15-year plan was submitted to Government for approval in 1972 (OSE, 1972). However, in 1974 the planning orientation within the railway once again changed. Thus, both because the government was still delaying to decide upon the approval of the 15-year plan and because the oil crisis had already started, the railway was forced to abandon major development plans and to concentrate in short-term, limited improvements (renewals, alignments) of the existing lines (OSE, Annual Report 1974).

In 1975, a new 15-year development plan was prepared, to allow for both a new estimation of the associated costs (as the older plans had not yet been approved by the Government) and a new estimation of the period required for the completion of the projects. This new plan which will form hereafter the basis of any future development scenario, made provision for two segments of double track in the Athens to Thessaloniki line (Athens-Tithorea and Domokos- Thessaloniki), separated by the existing single-track mountainous segment Tithorea-Domokos (121 km). The new double line should allow for speeds of 200 km/h. A similar double line of the same configuration was projected for the Athens to Patras (Peloponnese) route. The projected cost of the new 15-year development plan was 37 billion drs (OSE, 1975). In 1976, an investment fund of 6.2 million drs was approved and provided by the Government, to allow for the funding of renewal projects on the existing single-tracked main line (OSE, Annual Report 1976). In 1977, OSE contracted a loan with a group of German Banks for an amount of DM 100 million in order to finance the construction of the infrastructure projects (earthworks, bridges, etc.) for the alignment and the doubling of the main line (OSE, Annual Report 1977). A second loan, for the same purpose, was contracted in 1978 with a Greek Bank for 500 million drs (OSE, Annual Report 1978) and a third one in 1980 with the European Investment Bank (21 million ECUs) (OSE, Annual Report 1980). Thus, by the time the country entered the European Community (January 1981) and a first major change in Government occurred (Socialist Party, October 1981) the construction projects for the upgrading of the Athens to Thessaloniki (and Idomeni) main line were under way (OSE, Annual Report 1981).

B.2.2. The Developing Rail Plan

B.2.2.1. Introduction

The arrival of the new Government in 1981 resulted in the appointment of a new Board and top executives in the Enterprise. The new management did not abandon the existing long-term development plan (that is the new 15-year development plan prepared in 1975). However it felt necessary to revise it in order to incorporate both the renewal of the company's fleet and an emphasis in the social character of the enterprise which should be reflected both in the level of services and in the type of relations the company maintained with its employees. Thus, in 1983, a Group for Strategic Planning and

Programming (OSSP) was set up at the headquarters of the Greek Railway and was requested to prepare a 15-year long-term plan for the development of the enterprise over the period 1983-97. This plan should also contain a short-term (5-year) programme of activities to be undertaken within the period 1983-1987 (OSSP, 1983).

It was believed that for a nation-wide railway enterprise where the engineering function constitutes the basis of operations a long-term plan for construction and modernisation projects should always exist, from which a short-term programme could derive at any time. By the end of each year, the accomplishments could thus be assessed and result in a new short-term programme for the next five years which would incorporate either projects which did not manage to be completed on time or further projects from the long-term plan. Thus, the various organisational units would always have the time to properly prepare to confront the requirements and difficulties associated with the projects to develop over a 5-year time horizon and not to be overwhelmed by requests to reorganise in order to carry out the tasks of completing a programme of which they had no idea even a few months ago. This preparation should refer to all units and cover all functional areas of the enterprise (operations, personnel, rules, regulations, procurement). To this end, apart from an always existing 5-year constructions programme, a 5-year activities programme should also be prepared, in order to assist both the completion of the engineering projects and their incorporation into the operations (OSSP, 1983).

The 15-year, long-term plan prepared by the Group for Strategic Planning and Programming (OSSP, 1983) consisted of two parts: (1) a diagnostic study of the transport sector and the factors which affected the technological, commercial and economic dimensions within this sector which arrived at certain conclusions concerning the weakness and ineffectiveness of rail transport in Greece. The study contained also a forecast of the modal distribution of land transport by examining the yearly developments and by assuming the progress expected over this period both for road and rail. (2) Based on the conclusions of the diagnostic study it proceeded to examine, design and plan the projects and the activities to be undertaken by the enterprise, within the short-term period.

B.2.2.2. The Diagnostic Study

(i). Land Transport Development

At first, the study examined the inter-city road traffic (passenger and freight) by transport mode and its development over the period 1967-1981, i.e. the volume of traffic undertaken either by inter-urban buses of private regional bus companies (KTEL), or the enterprise's own buses (OSE), or by coaches, motor cars and trucks.

Concerning passenger transport the following were concluded: (1) there was a 302% increase in the number of motor cars in operation over the period 1970-1981. The average annual rate of increase over the period 1961-1981 was 15.9%; (2) there was a 165% increase in the numbers of inter-urban buses and coaches over the period 1961-1981 and a 75.4% increase over the period 1970-1981; and (3) there was a 327% percent increase in the numbers of trucks and lorries over the period 1970-1981. Concerning the traffic transported by mode it was shown that: (1) though the number of inter-urban buses of the regional private companies (KTEL) remained unchanged over the period 1967-1977, the passenger journeys increased by 52% over this period (and the passenger-km by 20%). Thus, an increase of seats available per bus was assessed, an improved level of service in terms of frequency and a reduction in the average journey length; (2) the passengers transported by the company's own buses (OSE) increased by 66% (176% in terms of passenger-km) which implied a significant increase of the average length of the journey (approx. 65%) over the period 1967-1977. However, after 1978 these rates of increase were much lower; (3) it was indirectly assessed that private (not scheduled) coaches gained over the period 1967-1981 a significant market share by increasing both the numbers of vehicles and the passengers transported by 280%; (4) there was a tremendous increase in the number of motor cars which resulted in losses of traffic for both the railway and the bus companies. Over the period 1967-1981, the number of motor cars was increased by 552%; there was a proportional increase in the number of passenger traffic of this type (OSSP, 1983).

In road freight transport, it was assessed that over the period 1967-1977 traffic increased by 364 % for the licensed trucks and by 284% for the private trucks. That is, road freight traffic doubled in the five years from 1967 to 1972 and doubled again from 1972 to 1977 (OSSP, 1983).

(ii). Environmental Reasons Constraining Railway Development

The diagnostic study assumed that the external (environmental) reasons constraining the development of the railway were (OSSP, 1983):

(1) Physical: Because of the location of the country at the southeastern end of the continent, transit freight traffic was exceptionally small and accounted for only 9% of total traffic, whereas in central European networks it accounted for 25-50%. On the other hand, passenger transit traffic virtually did not exist. Further, the enormous length of coastline and the associated big number of ports and port facilities were favouring sea freight transport.

(2) Demographic: Almost half of the country's population was concentrated in two cities (Athens and Thessaloniki). That is, outside these two metropolitan areas the population density was very low which again did not favour the development of rail transport.

(3) Structural: Agricultural production accounted for a substantial part of national production. However, the agricultural products, being in most cases sensitive, favour road transport which provides greater speed, flexibility and accessibility. On the other hand, industry and especially heavy industry had developed in areas not properly served by the existing railway network. The country's mineral production (quarries, bauxite mines, cement factories, etc.) was in most cases located next to a port, that is there was not any serious possibility for rail transportation of these products.

(4) Institutional: There wasn't any kind of State's control over road transport. For example, truck drivers were allowed to work for 14-18 consecutive hours and thus competition rules were violated. Further, administrative or pricing rules as well as tax or other incentives that could assist in promoting the transport mode most preferable for each type of shipment did not exist.

(iii). Internal Sources of Ineffectiveness

The following internal source of ineffectiveness were also identified (OSSP, 1983):

(1) Technology: the network was the result of amalgamations of various independent companies; thus it incorporated two narrow-gauged parts, far from each other (Peloponnese and Thessaly). On the other hand, a large part of the line developed over mountainous areas and this had resulted in an unfavourable layout (many curves with small radius and steep gradients).

(2) Character: The public enterprise character of the railway implied that both its operation and its development was dependent upon Government's funding. On the other hand, contrary to the users of the road network, the railway enterprise, owning the railway line, had also the obligation to spend large amounts of money in permanent way maintenance.

(3) Personnel productivity: Since 1972, personnel's productivity was steadily decreasing. However, the exact rate of this decrease should be calculated after taking into account institutional changes such as: (1) the reduction of the working hours per week, (2) the introduction of the five-working-days week in 1981, (3) the increase of the annual leave per employee to four weeks (1982), and (4) the introduction of additional employee-welfare measures (maternity protection, etc.). On the other hand, it should be noted that the period which followed the fall of the dictatorship (1974) was marked by an increased

mobility of the trade unions and resulted in substantial industrial action which inevitably affected the railway.

(4) Rolling stock reliability: The number of locomotives' breakdowns was very high when compared to international standards and could not be justified neither in terms of the age of the units nor in terms of their overall haul. However, it was recognised that the multiplicity of types of units within the company's fleet was a factor seriously constraining the proper rolling stock maintenance and repair.

(5) Costing and pricing policy: There was a disproportionate increase of the cost of the services offered respectively to fare increases. Thus, over the period 1971-1984, while wages (which constituted the 70% of the annual operations expenditure) and other expenses went up eleven times, fares went up only six times. There were not commercial criteria in railway's operations. For example, passenger fares in 1977 were covering 63.5% of the general transport cost whereas in 1983 they only covered 38%. Under these conditions, attempts to increase the traffic volume would not result in the improvement of the financial position of the enterprise, unless they were complemented by attempts to reduce the operating costs.

B.2.2.3. The 5-Year (Short-Term) Plan 1983-1987

The study concluded that in order to overcome the internal causes of ineffectiveness a short-term plan should be implemented over the period 1983-1987. This plan (Figure B.5) incorporated both a 5-year constructions and engineering programme and a 5-year operations programme; the latter should assist both the completion of the engineering projects and their incorporation into the operations.

(i). The 5-Year Constructions Programme (1983-1987)

The short-term constructions programme placed emphasis upon the completion of the developing projects for the doubling and electrification of the Athens to Thessaloniki (and Idomeni) main line, as well as on the installation of electromechanical signalling and new telecommunications.

Within this corridor, two single-tracked segments should also continue to exist at this stage. The first referred to the Thessaloniki to Idomeni (Yugoslavian border) line (76 km) where the volume of the traffic transported did not justify the doubling of the line. The second referred to the Tithorea to Domokos (121 km) mountainous part of the main line where, in future, a possible abandonment of this route and a construction of a coastal route parallel to the motorway should be considered. The construction projects associated with it are summarised in Figure B.6.

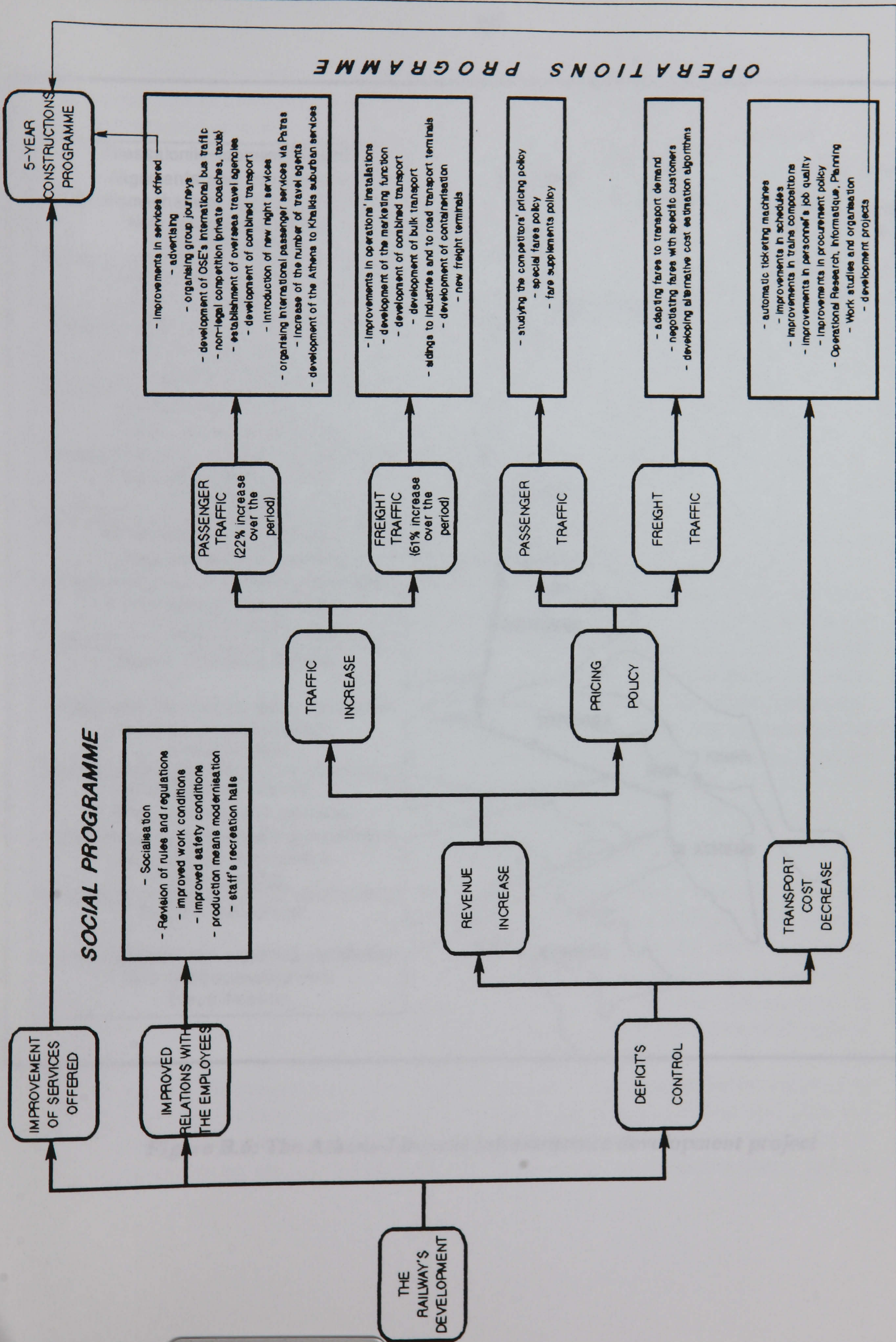


Figure B.5: Summary of the 5-year Rail Plan (1983-1987)

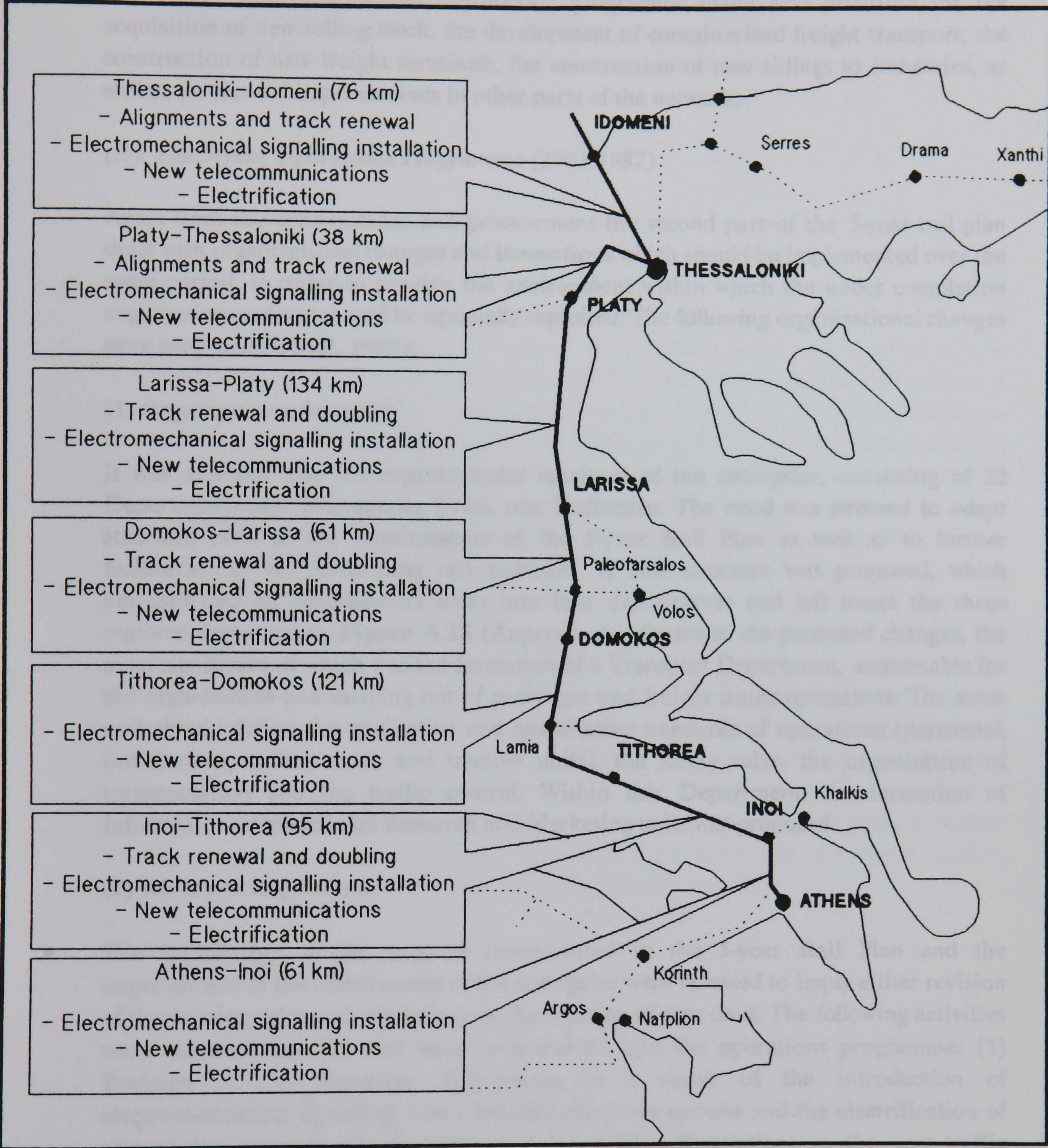


Figure B.6: The Athens-Idomeni infrastructure development project

The 5-year constructions and engineering programme made also provision for the acquisition of new rolling stock, the development of containerised freight transport, the construction of new freight terminals, the construction of new sidings to industries, as well as for limited improvements in other parts of the network.

(ii). The 5-year Operations Programme (1983-1987)

Apart from the constructions and procurement the second part of the 5-year rail plan dealt with organizational changes and innovations which should be implemented over the same period, in order to provide the environment within which the under completion engineering projects should be optimally exploited. The following organizational changes were proposed (OSSP, 1983):

(1) Organizational Structure

It was assessed that the organizational structure of the enterprise, consisting of 22 Departments and autonomous Units, was ineffective. The need was stressed to adapt structure both to the requirements of the 5-year Rail Plan as well as to further facilitation of the developing rail activities. A new structure was proposed, which amalgamated all headquarters units into four departments and left intact the three regional departments. **Figure A.18** (Appendix A) illustrates the proposed changes, the most significant of which was the formation of a Transport Department, accountable for the organization and carrying out of passenger and freight trains operations. The same unit should define the qualitative and quantitative standards of operations (personnel, installations, rolling stock and tractive units), the safety rules, the organization of transportation and the traffic control. Within this Department, the formation of Informatique, Operational Research and Marketing units was proposed.

(2) Rules and Regulations

The exploitation of the projects incorporated in the 5-year Rail Plan and the improvement of the effectiveness of the enterprise were assessed to imply either revision of the existing rules and regulations or the creation of new ones. The following activities were assessed essential and were incorporated into the operations programme: (1) Revision of the Signalling Regulations as a result of the introduction of electromechanical signalling, new telecommunications systems and the electrification of part of the network; (2) Adaptation of the Traffic Regulations to the new traffic conditions; (3) Preparation of new Safety Rules, corresponding to the introduction of high speeds; (4) Preparation of technical manuals for the construction, operation and maintenance of electrified lines and new telecommunications systems as well as for the maintenance of electric locomotives; (5) preparation of operation rules for the

introduction of new transportation systems (combined passenger-motor car journeys, combined freight transportation on lines of different gauge); and (6) revision of various existing rules, regulations and directives concerning rolling stock maintenance, level crossings manning, procurement, personnel, etc.

(3) Personnel Welfare

The essential issues related to the human element of the enterprise, concerning the implementation of the development plan referred to the planning of new recruits, personnel training and the revision of rules and regulations. A "*social programme*" was incorporated into the Operations Programme and made provision for a number of actions to be taken in order to improve work conditions and human relations within the enterprise (i.e. the socialisation, the revision of the rules and regulations, refurbishment and improvements in the job's environment, the improvement in the safety conditions, the modernisation of work conditions and of the organisation of the operations, the creation of workers' self-controlled rest and recreation halls within the company's premises). The proper planning of new recruits and personnel training were assessed as primarily related with the broader goals of the development plan, that is deficit's control and the improvement of services offered.

(4) Personnel Training

Personnel training was assumed as consisting of two parts: (1) training of new recruits, and (2) training-education of employees on new issues arising from the desired modernisation of the enterprise. It was decided that the Personnel Department should prepare training programmes by personnel level; each of these programmes should be undertaken during the period exactly before the exploitation of any completed project. The functional departments in cooperation with the regions should prepare training programmes to be sent to the Personnel Department for execution.

(5) Procurement Policy

The procurement policy was assessed as one of the building blocks of the smooth development of railway activities. However, the great variety of locomotives and rolling stock had resulted in increased needs to stock-control and substantial inventories of spare parts. This control was becoming difficult because of the lack of any computerised system. On the other hand, the need to import the majority of spare parts and the delays associated with the cumbersome State's import policy had resulted in a difficulty to properly plan the equipment maintenance and repair. The Operations Programme was suggesting changes in the State's import policy which, however, could not be decided by the railway itself. On the other hand, concerning stock control, it was believed that a

proper estimation of the annual requirements through a study of the past periods would facilitate the timely preparation of specifications, standards and tender documents. Thus, the Operations Programme contained: (1) the coding of the stocked material, especially the one that accounted for the biggest part of purchases, and (2) the preparation and introduction of a computerised stock control system.

B.2.2.4. The Financial Dimension of the 5-Year Plan (1983-1987)

(1) Investment: In 1984, the Government passed the 5-year national development plan (1983-1987) which incorporated a long-term railway development plan of projected cost of 93 billion drs (1982 prices) from which 45 billion referred to the 5-year period 1983-1987 (KEPE, 1983). Figure B.7 provides the projected distribution of this funding over the 5-year period.

functional area		annual investment (million drs 1982 prices)					period 1983- 1987
		1983	1984	1985	1986	1987	
1	Operations Installations and Equipment	40	850	1 767	2 143	960	5 760
2	Permanent Way and Signalling Projects	1 820	4 740	8 915	8 775	6 700	30 950
3	Rolling Stock Acquisition, Workshops and Depots	1 220	780	2 520	17 603	2 170	8 450
Annual Totals		3 080	6 370	13 202	12 678	9 830	45 160

Figure B.7: The approved by the Government 5-year investment plan

(2). Revenue: The plan forecasted a 22% increase in passenger traffic over the period 1983-1987, that is average annual increase 4.4% and a 61% increase of freight traffic over the same period (average annual increase 12%). It also projected an annual average increase of fares per passenger-km of 19.1 % (that is a 95.5% increase for the whole period) and a 13.7% annual average increase of freight tariffs per tonne-km (67.5% overall increase). It also forecasted that completion of the projects should result in the reduction of transport costs by approximately 20%. Thus a reduction of the operations deficit by 18% in constant prices should be expected in 1987, in comparison with the 1983's deficit (OSSP, 1983).

B.2.2.5. Financing the Plan from Community's Funds

During the 1980s, as a result of significant projects for the revival of the railway industry in the principal European networks (France, Germany, Italy, etc.), a discussion started on the feasibility of the formation of a European High-Speed Network (EHSN). This network would not be studied or constructed centrally. Each national railway should be responsible for the study and construction of its national part, according to common principal standards (double track, 200 km/h speeds, minimum curvature 2 000 m, maximum slope 14/000, minimum axle load 22 tonnes).

It should be noted that the main intention of the EHSDN project was to provide a high-quality passenger service among the cities of central Europe, by allowing for the completion of journeys within few hours (e.g. London-Paris 2h58, Paris-Koln 2h55, Amsterdam-Brussels 1h28) and for the achievement of overnight connection between any pair of the cities incorporated into the network (excluding Athens and Dublin), as illustrated in **Figure B.8**. It was recognised that in the case of Greece *"in all events, the distance is so long that priority will naturally go to night services. Yet, even if major improvements to speeds are made in Yugoslavia, the distance between Athens and Europe's other capitals will remain too great for the journey to be completed overnight"* (Community of European Railways, 1989; p.14).

However, the Greek Railway decided to include into the EHSN the principal axis of the network, i.e. the line from Patras to Athens, Thessaloniki and Idomeni (**Lalakakis, 1989**) mainly in order to ascertain the constant flow of funding required in order to complete the upgrading of the main line. Thus, a feasibility study for this project was prepared and submitted to the Commission of the European Communities (**Economic Research Centre, 1989**).

The study concluded that the project was worth undertaking for three reasons: (1) because both the pre- and after-tax internal rates of return were, in general, comparable to those realised by investment in Greek manufacturing; (2) because the calculated internal rates of return exceeded the current cost of borrowing for long-term investment; and (3) because their range was falling within the internal rates of return which had been reported in other European networks. The study indicated that the earlier the new line gets into commercial operation and the closer the fares are to a triple fare scheme the more profitable the investment would turn out to be (**Economic Research Centre, 1989**). Thus, it suggested a 6-year construction scenario the cost of which was almost 185 billion drs (1989 prices), from which 95 billion referred to the construction of the Athens to Patras new line.

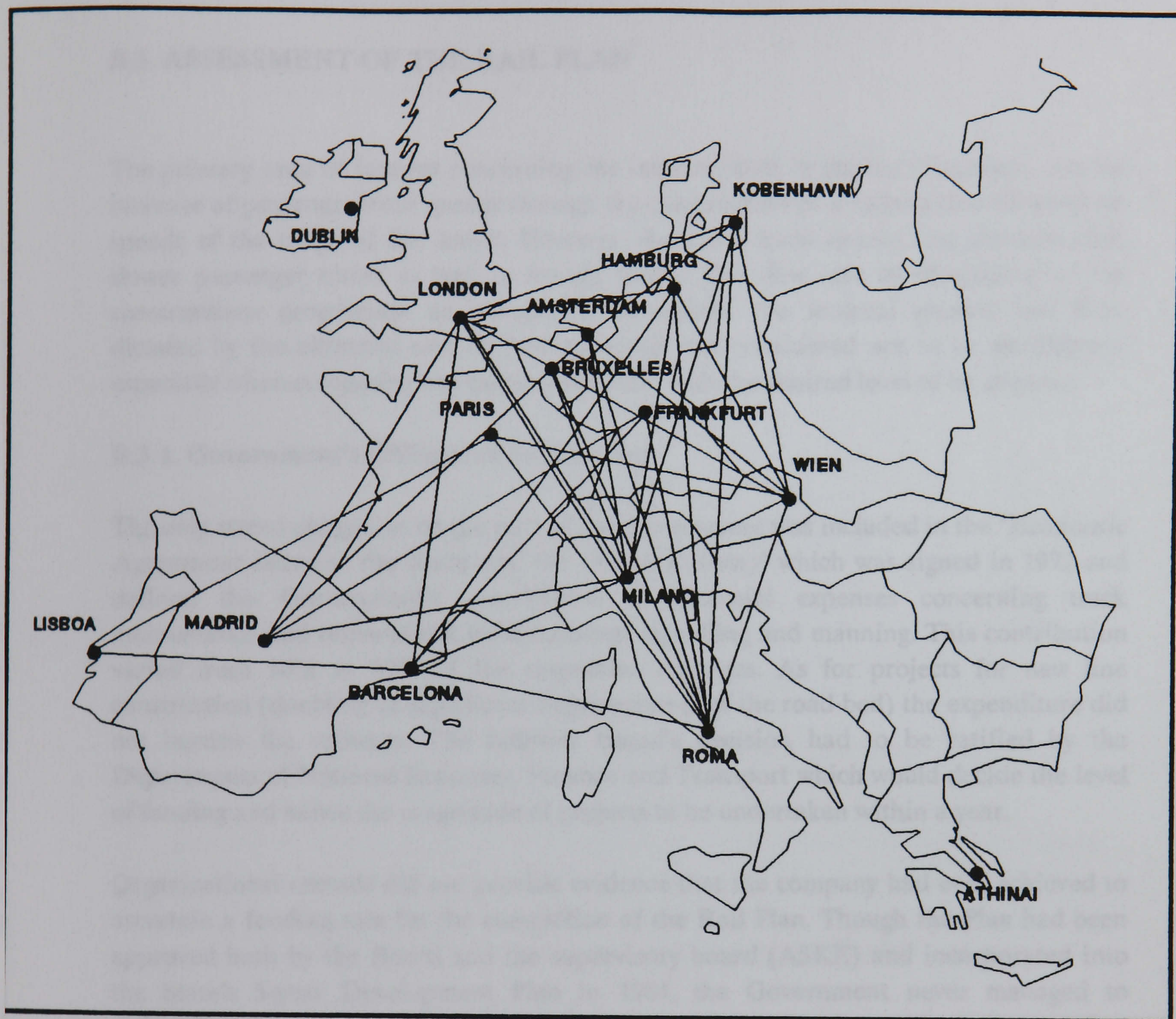


Figure B.8: Future high-speed night rail services in W.Europe

In 1990, the Commission of the European Communities decided to assist in the implementation of the projects on the Athens to Idomeni part of OSE's proposal. Thus 142 million ECUs of the projected cost of 300.5 million ECUs (1989 prices) would be provided by the European Regional Development Fund over the period 1989-1993. A constant annual investment flow should thus be guaranteed for a part of the constructions programme (Commission of the European Communities, 1990).

B.3. ASSESSMENT OF THE RAIL PLAN

The primary area of interest concerning the improvement in quality of services was the increase of passenger train speeds through the construction of a railway line allowing for speeds of the range of 200 km/h. However, the same track should also accommodate slower passenger trains as well as freight trains. The slow rate of completion of the constructions programme as recognised throughout the internal reports had been dictated by the allocated rate of funding which was considered not to be satisfactory, especially when comparing the existing situation with the desired level to be attained.

B.3.1. Government's Obligation for Funding

The only stated obligation on the part of the Government was included in the "*Economic Agreement between the State and the Greek Railway*" which was signed in 1972 and defined the Government's contribution to financial expenses concerning track maintenance and renewal and level crossings signalling and manning. This contribution varied from 50% to 80% of the respective expenses. As for projects for new line construction (doubling or significant improvements of the road-bed) the expenditure did not burden the railways. The relevant Board's decision had to be ratified by the Departments of National Economy, Finance and Transport which would decide the level of funding and hence the magnitude of projects to be undertaken within a year.

Organizational records did not provide evidence that the company had ever achieved to ascertain a funding rate for the completion of the Rail Plan. Though the Plan had been approved both by the Board and the supervisory board (ASKE) and incorporated into the State's 5-year Development Plan in 1984, the Government never managed to maintain a constant flow of investment funds during the years that followed. On the other hand, in the past, vague declarations of governmental officials in the 1970s (just after the oil crisis) did not result in creating a strong impulse to get involved into an extended development plan. Road constructions and car-ownership policies kept on attracting the massive portion of infrastructure investment (Technical Chamber of Greece, 1989).

B.3.2. Rate of Investment

The claims that the rate of funding was never adequate to cover the enterprise's investment needs appears to be strong. Figure B.9 shows the level of investment over the studied period. As a member of the Board commended, if this level of funding was to be maintained, the time of completion would extend to a 50-year horizon.

year	Railway's proposals	State's approvals	investment absorbed (million drs.)				
			Public Investment		BEI and German Banks Loans	EEC Regional Development Funds	Total Investment
			current prices	(1978 prices)			
1978	2 760	1 880 *	1 181	(1 181)	500	-	1 681
1979	1 400	1 170 *	1 153	(969)	260	-	1 413
1980	-	1 426 *	1 410	(949)	770	-	2 180
1981	-	1 781 *	1 412	(763)	70	-	1 482
1982	2 750	2 150 *	2 126	(950)	600	-	2 726
1983	-	2 925 *	2 985	(1 110)	285	620	3 890
1984	10 350	9 000	4 402	(1 381)	482	566	5 450
1985	13 500	11 000	4 390	(1 155)	3 015	45	7 450
1986	16 900	10 500	3 540	(757)	3 287	3 227	10 054
1987	17 000	16 785	9 846	(1 809)	3 013	1 845	14 704
1988	26 500	15 000	7 872	(1 274)	4 068	1 335	13 275
1989	46 000	18 000	9 955	(1 400)		?	17 350

*: Since 1984, the interest charges of the investment loans are incorporated in the investment programme.

Figure B.9: Investment in Railways (1978-1989)

B.3.3. Deficit's Control

One of the main strategy-areas is related with the improvement of the bad financial position of the enterprise. *"The only means to achieve it is to accelerate the completion of several construction projects and rolling stock purchases which, in relation with institutional, organizational, commercial and financial policies will relieve the unfavourable position of the enterprise in the transport market. If this is not achieved by 1992, year of the completion of the European market, the Greek railway will be cut off from the other networks"* (OSE, 1989b).

The period examined exhibited a steady yearly increase of the operational deficit. Though this was not completely covered by the State (as mentioned previously) and, instead, borrowing was chosen to alleviate the situation, it should be stressed that attempts to decrease costs associated with rail services could not be identified. Wages, fuel, materials/spares, administrative expenses and labour- force, all throughout the implementation period either increased or remained constant. Though the labour costs were the highest cost incurred, the Plan stressed the need for more personnel to be recruited during the implementation phase. Personnel reduction and, possibly, allocation of personnel to new posts via an intensive training were not considered. Moreover, the discretion the Government had over employment, either through restrictions on hiring (in periods of strict financial policy such as the period 1985-1988) or through the imposition of recruitments, especially during pre-electoral periods (note the peak in personnel number in 1984) was not considered as an important origin for the reconsideration of the situation. However, cost control could not be achieved when its most significant component was not under control. Therefore, the statement contained in the 1989 Annual Report, according to which *"personnel hiring should be independent of the State's supervision and should be only confined into the limits of the approved budget"*, may only be considered as a wish, with no real impact on the company's fortunes.

B.3.4. Procurement Policies

Within this strategic-area, improvements were seen as contributing to cost decreases and to efficient operations. Yet the organization over this time tried without success to tackle the problem. Internal reports pointed out to serious deficiencies in the existing system; these deficiencies were caused by external factors (OSE, 1987). Materials required in a specific year usually arrived two years later, as a result of both the requirement for consecutive ministerial approvals and of the time consuming system of adjudication of the lowest bid. Furthermore, because procurement is directly related to the level of funding, when the latter was constrained (currency restrictions, Central Bank's policies to cut off commissions, etc.) the difficulties to drive bids forward were increased.

Within the organizational context, the lack of a prioritized and concise planning that would operate as an integrating mechanism accentuated the problem. The centralised structure of procurement activities had rendered inflexible and rigid the whole process. When adjustments were required to provide for the satisfaction of the actual needs of the Production Units after the governmental amendment of the proposed Annual Purchases Programme, the Procurement Department consulted only the headquarters functional Departments, without asking the production managers to work out new proposals. *"A spirit of ineffectiveness is cultivated as far as the proving of these initial proposals is*

concerned and this increases the ineffectiveness of the process and burdens it with a bulk of non-productive activities” (OSE, 1987).

Facing a modernization project which incorporated a high technological level in all areas (sophisticated new machinery, modern tractive units, etc.) the organization lacked the ability to issue technical specifications concerning the purchase of some required spare parts or materials. This lack of expertise coupled with the previously mentioned problem (which resulted in usually assigning procurement activities as a secondary job to different employees in different time periods) rendered the procurement process a vicious cycle.

Finally, the transitory stage of the institutional framework was considered to add more problems to an already complicated situation. For example, before the passing of the Socialisation Law the enterprise had to submit its Annual Purchase Programme for approval to the Department of Transport. Later this procedure changed and, concerning imported supplies, the programme had only to be submitted to the Department of Industry. However, the latter Department objected this process and argued that since the details of the new legislation had not yet been elaborated the Department's of Transport approval was still required. The company's solicitors submitted to this view; thus the bids had to be approved by both Departments, a process that added considerable delays.

B.3.5. The Bottom-Up Process

The approved Rail Plan was never communicated to the Regional Departments in order to result in functional 5-year plans based upon their forecasts and on the guidance they had received. This resulted from the fact that the proposals of the Strategic Committee (OSSP) were the ones approved by the Board (15-year development plan, 5-year plan) and no contingency plans were incorporated nor risk analysis included. Neither the Strategic Committee nor the Department of Planning and Organization asked for such a process to be followed. The same pertained to the functional Departments as well. Plans were always imposed from the top. By not getting involved into the planning process, local production managers responsible either for providing essential information or undertaking action plans felt alienated and treated the plan as a second rank issue (the attitude towards procurement substantiates it). Such an issue as the one just mentioned draws attention on the lines of authority and communication between the different organizational units and on the information and data that flow between them. Organizational structure and goal setting are two inter-woven concepts. Thus, the following section, based on organizational evidence, traces the changes in this structure and highlights the rationale behind them.

B.3.6. Organizational Structure

As mentioned in **Appendix A**, in 1986 the enterprise attempted to introduce a new structure. The reasons for this change, as described by the group that produced the new design, were:

- (1) The disproportionate increase in authority of the headquarters Departments which resulted in bureaucratic distortions and indifference for the outcome on the part of the production units. HQ Departments functioned independently with little horizontal collaboration; thus, the production units in order to act were bound to ask all of them.
- (2) Alternative modifications of this structure over the years had resulted in the creation of Units to handle new issues arisen. However, the functioning of these units was not properly integrated into the design of the organisation (e.g., the organizational unit supervising the 294/83 contract for rolling stock acquisition and domestic manufacturing).
- (3) The existing procurement system had a negative impact on basic activities within the company. The increased centralization had led to a misconception that the procurement's role *"was essential and purposeful on its own"*.
- (4) The difficulty to identify the manager(s) responsible when the reason behind deviations was sought. This stemmed from vague descriptions of accountabilities or overlapping responsibilities in the existing structure. Delays in the making of a decision, the making of conflicting decisions or no decisions at all were the main negative consequences.
- (5) The need to strengthen the mission of the enterprise- as a transportation firm. Therefore, market research and services development had to be accentuated. Closely related to this was the introduction of the Socialisation Law which stressed the need for the enterprise to improve its performance in both social and financial terms.

The new organizational structure, being the proposal of an internal group whose principal members were the Head of the Department of Planning and one of the Assistants to the General Manager, inaugurated changes in the following areas: (1) The functional Departments should have a Procurement and Stock Division for their own needs; (2) Training should be understood as a major activity and be incorporated into each Department's area of responsibility; (3) information flows and statistical data analysis had to be produced by the Departments in order to measure some performance indices defined at a higher level; (4) the Department of Planning should acquire a new

role as the scientific "*brain*" of the enterprise; and (5) a Transportation Department should be set up containing the duties of the existing Operations and Traction Departments, the Regional Operations Divisions as well as the rolling stock Depots; the same Department should also be responsible for marketing, cost structure, relative procurements and stocking.

The report concluded: *"A central unified planning is needed; this now can be achieved by the employees. With planning, few decision centres, and relative autonomy, the Departments will be in a position to make the decision-making system efficient and to produce a positive outcome"*.

However, legal obstacles arose after the approval of the new structure both by the Board and the responsible Government Departments. The Superior Court responsible for ratifying the Act (that is, the legal form that introduced the new structure) required a detailed description of the duties of each department, division or unit as well as the numbers and distributions of occupational posts, and matters concerning its implementation. It judged that unpermitted over-authorization was introduced by a paragraph which stated that the Board of the enterprise could decide in future upon further restructuring of the organizational units and upon the redistribution of competencies among them or the cancellation of some units. The solicitors of the enterprise suggested that the proposed structure required to be ratified by an act only to the extent that included statements adjusting the enterprise to the spirit of the new legislation (socialisation). Such statements were the ones describing the relations of the company with the new bodies introduced by the Socialisation Law and the identification of matters that pertained to their competencies. When the organizational structure did not contain such statements but referred only to the internal functioning of the enterprise, there was no reason for the new structure to take the form of an Act. In this case, a ministerial approval would suffice for its ratification. Therefore, the proposed structure had to be recompiled and the appropriate parts to be submitted to the court's ratification. This work, as suggested by the solicitors, should better be undertaken after the new foundation law (adapting the enterprise to the socialisation legislation) had been established, because in this case some additional problems of ministerial jurisdiction (concerning the ratification of institutional documents) would have been clarified.

The enterprise considered that it was difficult to assess when the new foundation law was about to get established and decided to pass through an intermediate stage. The existing organizational structure was enriched with sections of the proposed one (except for the sections referring to socialization). The arrival at that time of the new General Manager influenced strongly the process of change. Asserting publicly that the development plans are merely "*exercises on paper*" unless they have ascertained an adequate funding rate, he commenced the process to obtain Community's grants for railway development. The

Rail Plan was re-assessed in view of its financial viability (as described in a previous section) and the feasibility study being adopted by the State was finally accepted by the Commission and included in the Structural Funds. The new General Manager understood the changes to be introduced into the organizational structure by the submitted enriched version of the structure as an opportunity to strengthen the service character of the enterprise. By seeking centralization of control at this stage, he believed that in the long run a separation of the supporting sub-systems from operations could be achieved (either through sub-contracting track or rolling stock maintenance activities or by passing permanent way ownership to a State's agency). The enriched structure was approved by the Board and started immediately to get implemented.

B.3.7. The Context of Labour Participation

Apart from the constructions and the operations programmes, the 5-year Rail Plan incorporated a social programme, the main goal of which was the improvement in the relations between the company and its employees. Participation of employees in decision centres (main Board, supervisory Board) and the guidance of enterprises with strategic importance for the national economy by a group of representatives of principal stakeholders were considered as means to promote the development of the public sector; this would lead to the improvement of services offered to the community.

However, the new scheme, though established by a law in 1983, was only implemented by the end of 1985, in a period where severe economic restrictions were imposed. The Government, attempting to reduce the big deficit of the Budget, increased the rates of the public utilities, restricted recruitment in the public enterprises and truncated the public investment. It is interesting to assess the progress of the new participatory scheme by reference to a meeting organised in June 1987 by the Department of National Economy, participated by the top management of public enterprises and other officials (Department of National Economy, 1987). Criticising the plans of the public enterprises, the Minister of National Economy stated that *"they are produced at the top, without the participation of the implementation units. The annual action-plans and the annual reports are descriptive, without quantitative information and reference to the required level of funding. The arising problems are tackled in a fragmented way, not within a framework or a programme. Budgets are followed-up only at the top of the enterprise and not at departmental level or lower"*.

These deficiencies were expected to be removed by (1) the personnel's activation at all hierarchical levels, (2) the creation of the missing link between planning and implementation, (3) the top management's capability to specify the mission of the enterprise and to motivate the labour-force towards the fulfilment of this mission; and (4) the participative schemes in planning and implementation processes. If public

enterprises succeeded in introducing effective planning and improving their financial results, the government, as stated by the minister, was oriented towards granting them greater autonomy.

The minister argued that the successful introduction of innovative planning systems in public sector firms depends upon the top management's wish to promote them. *"There is a need for a change in top management philosophy. They have to be encouraged and involved in such an activity, not because this is required by the Government but because, in a short time, they will witness a considerable improvement in their organization"*. In his own words, *"management is the art of motivating and developing personnel's capabilities"*.

The Government admitted that after two years of the new scheme's implementation *"nothing or very little has changed and, on the other hand, some new problems have arisen. The debate between the Government and the parties of the opposition has been transferred into the boardrooms and this renders the functioning of the scheme more difficult"*.

The governmental officials recognised that *"the Acts defining the duties of the new bodies of socialisation, their organization and functioning do not provide answers in major areas of interest, such as the enterprise's objectives and the way the Government's control is to be exercised. Indeed, the scheme started being implemented under an inverted order of priorities"*. However, they stated that *"now a parallel process has started, in order to define programmes for public firms indicating their objectives"*.

They also considered that some changes would facilitate the implementation process. Thus, the roles of the General Manager and the Chairman of the Board should be assigned to the same person because *"there is evidence that the Chairman tends to intervene into operational matters. A restatement of the Board's competencies should also follow, to bound interventions in administrative matters which should exclusively be the General Manager's responsibility"*.

The employees representatives stressed some negative points seen as *"heritage from the old times"*. They argued that interventions in day-to-day administrative matters or bureaucratic delays especially in procurement approvals needed not to exist. The enterprise could be controlled (by both the State and the supervisory Board) on the basis of quantitative goals and performance evaluations.

They rejected the view that political debate was the prevailing feature of the Board's meetings. They stated that *"the meetings of the socialisation bodies should be a place*

where a synthesis of views should be achieved. There are not an environment where opinions are recorded. There is a work to be done, directed towards achieving a certain result; according to the legislation, we are the ones responsible to accomplish it. Each stakeholders' representative brings in the views and decisions of the group (s)he represents. After that, after one has expressed his (her) own interest, (s)he is obliged to listen to the views and the interests of the other representatives; then, all together, we should provide a result, should do something".

Further, the employees' representatives stressed that they should not confuse their role and behaviour with that of the trade unions. They had a different but equally important role to play. If the unions imposed on the employees' representatives their daily practice, the bodies of socialization would become political arenas. This was not in the interest of neither the unions nor the employees.

They also claimed that problems were arising when they were dealing with the organizational hierarchy. The organizational structure of the enterprise as well as personnel's rules and regulations had not yet been adapted to the new scheme. This resulted in a *"strong opposition against the new scheme on the part of bureaucratic cliques which refused to cooperate, fearing the loss of organizational power"*

They opposed the proposed identification of the roles of the Chairman of the Board and the General Manager in the same person and predicted that this would lead to a further minimisation of the roles of both the main and the supervisory Board. They claimed that this solidification was against the spirit of the new law which advocated for the distribution of power and the participation of all interested parties. They argued that *"when a person is granted such a power he will attempt to make sure that everyone satisfies his wish. Especially the hierarchy will urge to satisfy this wish even before it has been expressed"*.

The employees' representatives pin-pointed to the urgent need for internal training. *"The enterprise has to submit strategic plans to the Board and the latter to the supervisory Board. The problem is that the organization does not have the ability to prepare rational plans. Tackling macro-level issues is something it never attempted during all these years. Specialised people are needed but they cannot be employed because of the Government's restrictions. However, we all know that even under these restrictions the public enterprises are fraught with temporary, unqualified staff"*.

Negatively influenced by the introduction of the new scheme in a difficult period, the employees' representatives felt trapped into a peculiar situation. As one representative

put it, *"the scheme has been introduced as a means for the facilitation of the implementation of Government's economic policy".*

The section may conclude with the questions posed by an employees' representative during his speech: *"How can we request from this new scheme to bring in new ethics, when the same perceptions prevail? How can it deem worthy when it is forced to co-exist with bureaucracy, with patronage, with employment without the "value" element? Finally, what weighs more? The care for the new scheme, even when stemming from an alternative interpretation or the results? Is it impossible to link the care for the scheme and the results and to pursue both through information sharing, consensus, and acceptance?... We arrived at a point where people question the credibility of the new scheme, at a point where scepticism is dominant, not because of functional weakness that exists, nor because of internal confrontations that are justified, but because of wrong actions of those responsible to express the political will. This should not be allowed to continue, if Government is really interested in the viability of the new scheme".*

APPENDIX C

INFLUENCE DIAGRAMS

C.1. INTRODUCTION

In order to clarify the decision-makers' view on why a set of decisions were defined as strategic, which were the arguments that justified them, and which were the interdependences among all the concepts involved, an analysis of the interview data followed, soon after the interviews had been completed. These perceptions were traced individually, not on an aggregate level representing a shared group perception, and their simulation in form of a cognitive map has been constructed. The strategists' causal logic was depicted using a specific kind of cognitive maps. The following section describes the type of the map used and demonstrates the way in which causal associations between concepts are discovered and established.

The factors that influenced the "strategic" decisions, in the participants own terms, were reflected upon a variety of economic, technological, and sociopolitical factors external to the enterprise, as well as they included terms such as training of personnel, availability of financial resources, system of rewards and compensation, originating from within the firm.

C.2. BASIC COMPONENTS

An influence diagram consists of four components. These are factors, links, chains, and loops. A brief description seems to be necessary, since Chapter 6, in which the analysis of data is presented, makes extensive use of them.

C.2.1. Factors

A variable expressed as a level or rate of something constitutes a factor: for instance the rate of resource acquisition, the level of satisfaction with the management system are distinct factors and are denoted by a capital letter. In **Figure C1** the factors are A, B, C, D, E.

C.2.2. Links

A link represents two factors related such that a change in one influences or exerts pressure on the other to change. A link is depicted graphically, as a line connecting the two factors with an arrow pointing to the influenced factor.

Links have also signs. They are either positive or negative. If a direct relationship exists between two factors, i.e an increase in one factor leads to an upward influence upon the other, or a decrease leads to a downward influence, then is said that the link is positive. A negative link represents an inverse relationship, i.e an increase in one factor has a downward influence on the other and vice versa. In **Figure C1** links are $A+B$, and $C+D$. When the signs are unknown, or uncertain, then, a notation that simply includes factors separated by a period is used, i.e $A.B$ or $C.D$.

C.2.3. Chains

A chain consists of three or more factors connected in series by links having the same direction. Chains, too, are either positive or negative. A positive chain is one with zero or even number of negative links. Conversely, a negative chain, is one with an odd number of negative links. In **Figure C1**, $A.B.C.D$ is a negative chain and $C.D.A$ is a positive one.

C.2.4. Loops

A loop is a set of factors connected in series by links of same direction that form a closed loop in which no factor appears more than once. It can be view as a chain that cycles back to meet itself. Loops, also, are positive or negative. As with chains, positive loops consist of a zero or an even number of negative links, while negative loops have an odd number of negative links. In **Figure C1**, $A.B.C.D.A$ is a negative loop, $B.C.E.D.B$ and $B.C.D.A.E.B$ are positive ones.

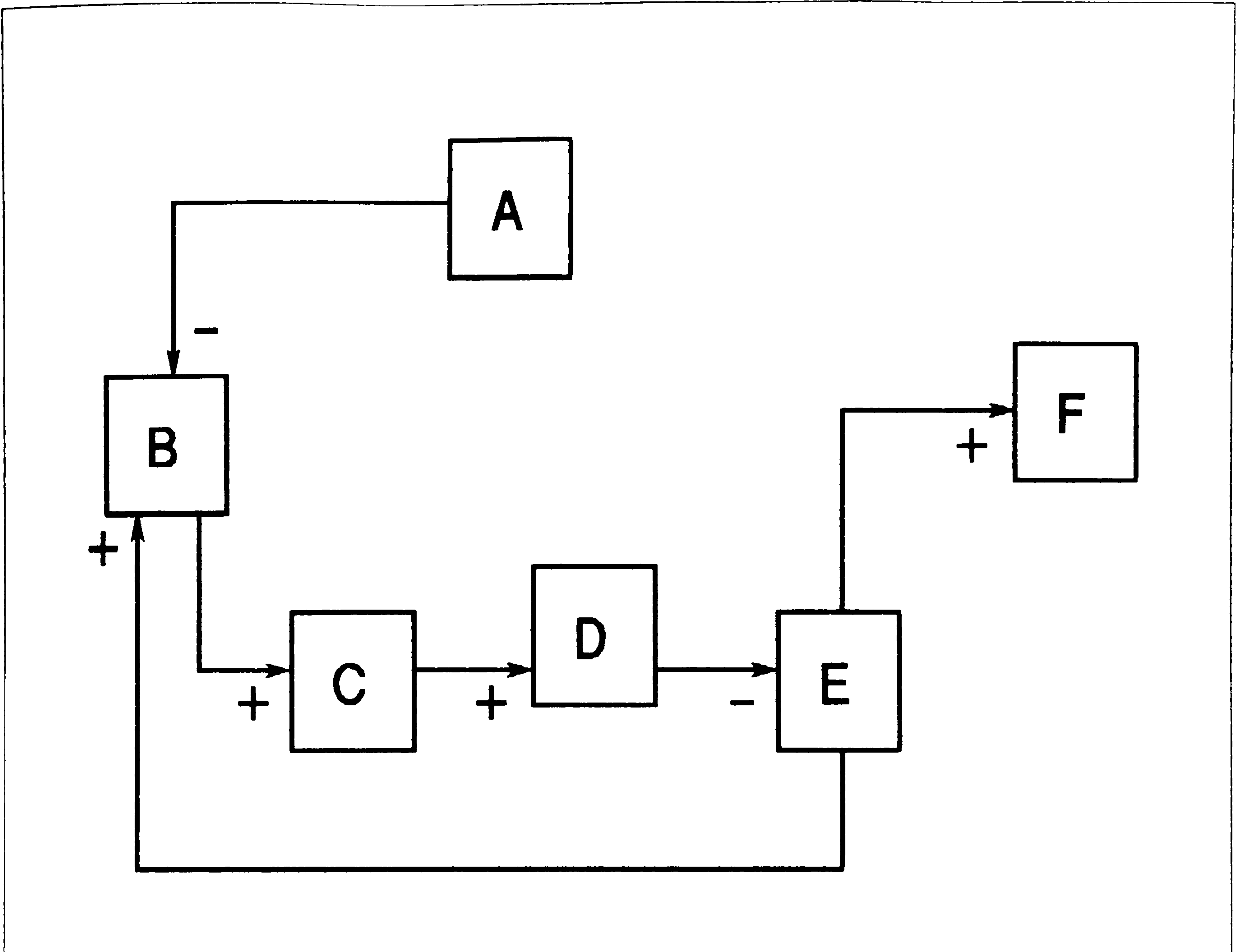


Figure C1: An Influence Diagram

APPENDIX D

CODING INFORMATION FROM THE BOARDS MINUTES

D.1. INTRODUCTION

Information on the Board's functioning was extracted from the Board's minutes and was classified. **Figure D1** displays the aggregation of the initially recorded 98 categories of topics discussed in the Board into 49 decision-areas. **Figure D2** provides the frequency per year of each area's appearance in the minutes over the period 1980-1988. Finally, **Figures D3 to D20** provide graphical illustration of distributions for the 18 decision-areas which were the ones strongly mentioned by the strategists during the interviews.

D.2. AGGREGATION OF CATEGORIES INTO DECISION AREAS

no.	AGGREGATED DECISION-AREAS (49)	old no.	IDENTIFIED DECISION-AREAS (98)
1	15-YEARS STRATEGIC PLAN	1	15-YEARS STRATEGIC PLAN
2	ACCIDENTS REMUNERATION	20	ACCIDENTS REMUNERATION
2		80	REMUNERATION FOR DAMAGES (OTHER RAILWAYS)
3	ADAPTATION TO STATE LEGISLATION/PLANS	30	ADJUSTMENT TO STATE LEGISLATION
3		91	SOCIALIZATION LAW
4	ANNUAL PURCHASES PROGRAMME	80	ANNUAL PURCHASES PROGRAMME (PROPOSALS, APPROVAL)
4		76	PROPOSALS TO STATE'S ANNUAL PURCHASE PROGRAMME
5	ANNUAL REPORT	90	ANNUAL REPORT (DISCUSSION, APPROVAL)
6	BOARD'S INTERNAL FUNCTIONING	11	BOARD'S INTERNAL FUNCTIONING
7	CAPITAL BUDGETING	50	ANNUAL BUDGET (DELIVERY, ALTERATION, APPROVAL)
8	CAPITAL INVESTMENT	70	ANNUAL INVESTMENT PLAN (PROPOSALS, MODIFICATION)
8		75	PROPOSALS FOR STATE'S ANNUAL INVESTMENT PLAN
9	CONSTRUCTORS/SUPPLIERS OBJECTIONS RESOLUTION	16	CONSTRUCTORS/SUPPLIERS OBJECTIONS RESOLUTION
10	CONSULTANT'S RECRUITMENT	17	CONSULTANT'S RECRUITMENT
11	CONTROL BY THE STATE	40	MINISTRY OF TRANSPORT PROPOSALS: APPROVAL
11		48	MODERNIZATION: GOVERNMENT MEETING
12	DELEGATION OF AUTHORITY	18	DELEGATION OF AUTHORITY SYSTEM
12		19	DELEGATION OF AUTHORITY TO THE G.M.
12		20	DELEGATION OF AUTHORITY: CASH LIMITS
12		21	DELEGATION OF AUTHORITY: RELTNS WITH TRADE UNIONS
13	EMERGENCY PROJECTS	22	EMERGENCY PROJECTS: APPROVAL
14	FACILITIES	13	BUILDINGS-HOTELS HIRE
14		74	PROPERTY (EXPLOITATION, INSURANCE, SALE)
15	FINANCIAL AFFAIRS	24	EXPENSES APPROVAL
15		25	FINANCIAL AFFAIRS (BANK ACCOUNTS)
16	GENERAL MANAGER APPOINTMENT	26	GENERAL MANAGER APPOINTMENT
17	INDUSTRIAL ACTION	27	INDUSTRIAL ACTION
18	INTERNATIONAL RELATIONS: BILATERAL AGREEMENTS	28	INTERNATIONAL RELATIONS
18		29	INTERNATIONAL RELATIONS: BILATERAL AGREEMENTS
19	LAND/EQUIPMENT DONATION/SALE	51	OBSOLETE MATERIAL/EQUIPMENT DONATION/SALE
19		81	RIGHTS GRANTING FOR COMPANY'S LAND USE BY OTHERS
20	LAWSUITS	31	LEGAL MATTERS: OSE VS. THIRD PARTIES
20		32	LEGAL MATTERS: THIRD PARTIES VS. OSE
21	LOANS	33	LOAN'S NEGOTIATION
21		34	LOAN'S APPROVAL (COMMERCIAL BANKS)
21		35	LOAN'S APPROVAL (INVESTMENT BANKS)
22	MANUFACTURING CONTRACTS	36	MANUFACTURING CONTRACTS
22		55	P.W.MATERIALS: MANUFACTURING CONTRACTS
22		56	PARTS MANUFACTURING POLICY
22		87	ROLLING STOCK: MANUFACTURING CONTRACTS
22		88	ROLLING STOCK: OUTSIDE MAINTENANCE/REPAIR
23	MARKETING	12	BOOKING OFFICES
23		37	MARKETING
23		38	MARKETING: ENVIRNMNT SCANNING EXPENSES INCREASE
23		77	PURCHASES POLICY
24	MATERIALS/EQUIPMENT PURCHASE	23	EQUIPMENT PURCHASE
24		39	MATERIAL PURCHASE
25	MODERNISATION PROJECTS	41	MODERNIZATION PROJECTS: CONTRACTS
25		42	MODERNIZATION PROJECTS: DEVELOPMENT MONITORING
25		43	MODERNIZATION PROJECTS: INVESTMENT ALLOCATION

Figure D1: Aggregated List of Board's Decision-Areas (continued)

no.	AGGREGATED DECISION-AREAS (49)	old no.	IDENTIFIED DECISION-AREAS (98)
25		44	MODERNIZATION PROJECTS: LAND ACQUISITION
25		45	MODERNIZATION PROJECTS: STANDARDS APPROVAL
25		46	MODERNIZATION PROJECTS: STUDIES
25		47	MODERNIZATION PROJECTS: TENDERS
25		49	MODERNIZATION: SHORT TERM PLAN: DISCUSSION
26	MODIFICATIONS IN PAY PLANS	65	PERSONNEL: ADDITIONAL EARNINGS: READJUSTMENT
27	NEW SERVICE INTRODUCTION	50	NEW SERVICE INTRODUCTION
28	OFFICE AUTOMATION	52	OFFICE AUTOMATION
29	ORGANISATION-WIDE PAY PLANS	72	PERSONNEL: SALARY INCREASES
30	ORGANIZATIONAL STRUCTURE: MODIFICATION	53	ORGANIZATIONAL STRUCTURE: MODIFICATION
31	P.W. MATERIALS: KNOW-HOW ACQUISITION	54	P.W. MATERIALS: KNOW-HOW ACQUISITION
32	PERFORMANCE MONITORING	14	CONDITION OF THE NETWORK: ACCIDENTS
32		15	CONDITION OF THE NETWORK: DISCUSSION OF OPTIONS
32		57	PERFORMANCE MONITORING
32		58	PERFORMANCE MONITORING: ANNUAL PLAN
32		59	PERFORMANCE MONITORING: BUDGETARY CONTROL
32		60	PERFORMANCE MONITORING: PERIODICAL STATIST.DATA
32		61	PERFORMANCE MONITORING: PRODUCTIVITY
32		62	PERFORMANCE MONITORING: ROLL STOCK RELIABILITY
33	PERSONNEL EDUCATIONAL LEAVE OF ABSENCE	63	PERSONNEL EDUCATIONAL LEAVE OF ABSENCE
34	PERSONNEL: ACQUISITION/FIRING	64	PERSONNEL: ACQUISITION
34		68	PERSONNEL: FIRING
35	PERSONNEL: WORKING CONDITIONS	71	PERSONNEL: SAFETY RULES
36	PRICING POLICY	30	INTERNATIONAL TARRIFFS
36		73	PRICING POLICY
36		78	READJUSTMENT OF GENERAL FARES
37	RELATIONS WITH TRADE UNIONS	79	RELATIONS WITH TRADE UNIONS
38	ROAD VEHICLES ACQUISITION	82	ROAD VEHICLES ACQUISITION-LEASING
38		83	ROAD VEHICLES: SPARE PARTS PURCHASE
39	ROLLING STOCK ACQUISITION	84	ROLLING STOCK ACQUISITION
39		85	ROLLING STOCK ACQUISITION: STANDARDS APPROVAL
39		86	ROLLING STOCK HIRE
39		89	ROLLING STOCK: SPARE PARTS PURCHASE
40	SERVICE RULES AND REGULATIONS: MODIFICATION	90	SERVICE RULES AND REGULATIONS: MODIFICATION
41	SHAREHOLDERS	04	ANNUAL BALANCE SHEET (PREPARATION, APPROVAL)
41		06	ANNUAL GENERAL MEETING (CALL FOR)
41		10	ASKE (ANNUAL GENERAL MEETING, SOCIAL AUDIT)
42	SIDINGS: CONTRACTS	93	SPECIAL CUSTOMERS, FREIGHT (SIDINGS CONTRACTS)
43	SPECIAL CUSTOMERS, FREIGHT	92	SPECIAL CUSTOMERS, FREIGHT (CONTRACTS, FARES)
44	SPECIAL CUSTOMERS, PASSENGER	94	SPECIAL CUSTOMERS, PASSENGER (OFFERS)
45	STATE'S 5-YEAR DEVELOPMENT PLAN	95	STATE'S 5-YEAR DEVELOPMENT PLAN: PROPOSALS FOR
46	SUBCONTRACTED SERVICES: CONTRACTS	96	SUBCONTRACTED SERVICES: CONTRACTS
47	SUBSIDIARY COMPANIES SET UP	97	SUBSIDIARY COMPANIES SET UP
48	TASK DESIGN/DUTIES MODIFICATION	66	PERSONNEL: DUTIES DESCRIPTION REGULATIONS
48		67	PERSONNEL: DUTIES MODIFICATION
48		69	PERSONNEL: PROMOTION RULES MODIFICATION
48		70	PERSONNEL: RULES AND REGULATIONS MODIFICATION
49	TOP PERSONNEL PROMOTION	98	TOP PERSONNEL PROMOTION

Figure D1: Aggregated List of Board's Decision-Areas

D.3. ANNUAL FREQUENCIES OF DECISIONS

no	decision-area	decisions per year									% decisions per year								
		80	81	82	83	84	85	86	87	88	80	81	82	83	84	85	86	87	88
1	15-YEARS STRATEGIC PLAN	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	2	0
2	ACCIDENTS REMUNERATION	7	4	1	1	1	1	1	8	1	3	2	0	0	0	0	0	4	1
3	ADAPTATION TO STATE LEGISLATION/PLAN	2	4	3	1	0	0	4	2	1	1	2	1	0	0	0	2	1	1
4	ANNUAL PURCHASES PROGRAMME	4	4	5	2	1	1	3	1	1	2	2	2	1	0	0	1	1	1
5	ANNUAL REPORT	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1
6	BOARD'S INTERNAL FUNCTIONING	4	1	1	2	0	1	6	2	2	2	0	0	1	0	0	3	1	1
7	CAPITAL BUDGETING	2	3	7	2	3	2	3	2	3	1	1	3	1	1	1	1	1	2
8	CAPITAL INVESTMENT	1	1	1	0	0	1	7	3	1	0	0	0	0	0	0	3	2	1
9	CONSTRUCTORS/SUPPLIERS OBJECTIONS	4	3	4	12	12	9	4	2	1	2	1	2	4	4	4	2	1	1
10	CONSULTANT'S RECRUITMENT	0	0	1	1	3	1	0	0	0	0	0	0	0	1	0	0	0	0
11	CONTROL BY THE STATE	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
12	DELEGATION OF AUTHORITY	4	7	9	4	6	2	8	2	3	2	3	4	1	2	1	4	1	2
13	EMERGENCY PROJECTS	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
14	FACILITIES	1	3	5	6	3	1	5	2	0	0	1	2	2	1	0	2	1	0
15	FINANCIAL AFFAIRS	3	3	2	2	5	2	1	2	5	1	1	1	1	2	1	0	1	4
16	GENERAL MANAGER APPOINTMENT	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
17	INDUSTRIAL ACTION	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	1	1	0
18	INTERNATIONAL BILATERAL AGREEMENTS	2	1	3	2	1	4	5	0	0	1	0	1	1	0	2	2	0	0
19	LAND/EQUIPMENT DONATION/SALE	11	12	10	8	8	4	4	7	2	5	6	4	2	3	2	2	4	1
20	LAWSUITS	17	6	6	23	24	24	5	15	4	8	3	2	7	9	11	2	8	3
21	LOANS	4	2	0	0	1	2	7	9	17	2	1	0	0	0	1	3	5	12
22	MANUFACTURING CONTRACTS	0	1	0	6	4	1	10	9	0	0	0	0	2	1	0	5	5	0
23	MARKETING	0	1	2	1	1	0	3	0	0	0	0	1	0	0	0	1	0	0
24	MATERIALS/EQUIPMENT PURCHASE	9	17	28	69	39	39	3	1	1	4	8	11	21	14	18	1	1	1
25	MODERNISATION PROJECTS	25	47	38	38	34	20	16	29	20	12	22	15	11	13	9	8	15	14
26	MODIFICATIONS IN PAY PLANS	10	13	20	7	8	8	10	6	15	5	6	8	2	3	4	5	3	11
27	NEW SERVICE INTRODUCTION	3	2	0	0	2	0	2	0	1	1	1	0	0	1	0	1	0	1
28	OFFICE AUTOMATION	4	2	2	0	0	0	2	0	0	2	1	1	0	0	0	1	0	0
29	ORGANISATION-WIDE PAY PLANS	2	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
30	ORGANIZATION STRUCTURE: MODIFICATION	9	4	3	2	5	8	15	4	4	4	2	1	1	2	4	7	2	3
32	PERFORMANCE MONITORING	5	9	4	4	9	4	9	10	5	2	4	2	1	3	2	4	5	4
33	PERSONNEL EDUCATIONAL LEAVE	8	1	1	1	2	1	3	2	1	4	0	0	0	1	0	1	1	1
34	PERSONNEL: ACQUISITION/FIRING	0	0	1	0	1	0	3	4	3	0	0	0	0	0	0	1	2	2
35	PERSONNEL: WORKING CONDITIONS	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
36	PRICING POLICY	4	2	4	6	7	2	6	10	3	2	1	2	2	3	1	3	5	2
31	P.W. MATERIALS: KNOW-HOW ACQUISITION	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
37	RELATIONS WITH TRADE UNIONS	1	0	0	0	0	0	3	1	2	0	0	0	0	0	0	1	1	1
38	ROAD VEHICLES ACQUISITION	0	1	2	9	5	2	2	1	0	0	0	1	3	2	1	1	1	0
39	ROLLING STOCK ACQUISITION	9	5	36	64	29	34	11	7	9	4	2	14	19	11	16	5	4	6
40	SERVICE REGULATIONS: MODIFICATION	0	1	2	6	2	2	0	4	3	0	0	1	2	1	1	0	2	2
41	SHAREHOLDERS	3	4	6	2	1	2	2	3	3	1	2	2	1	0	1	1	2	2
42	SIDINGS: CONTRACTS	3	1	4	0	1	0	1	0	0	1	0	2	0	0	0	0	0	0
43	SPECIAL CUSTOMERS, FREIGHT	16	22	21	21	20	6	12	15	13	7	10	8	6	7	3	6	8	9
44	SPECIAL CUSTOMERS, PASSENGER	6	7	5	6	3	3	2	1	0	3	3	2	2	1	1	1	1	0
45	STATE'S 5-YEAR DEVELOPMENT PLAN	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
46	SUBCONTRACTED SERVICES: CONTRACTS	11	7	8	12	9	8	7	5	1	5	3	3	4	3	4	3	3	1
47	SUBSIDIARY COMPANIES SET UP	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
48	TASK DESIGN/DUTIES MODIFICATION	10	9	8	5	17	12	7	14	6	5	4	3	2	6	6	3	7	4
49	TOP PERSONNEL PROMOTION	8	2	2	7	2	3	11	6	5	4	1	1	2	1	1	5	3	4
t o t a l s		214	216	257	333	271	213	211	196	139	100	100	100	100	100	100	100	100	100

Figure D2: Distribution of Board's Decisions (1980-1988)

D.4. DISTRIBUTIONS OF DECISIONS OVER THE PERIOD EXAMINED

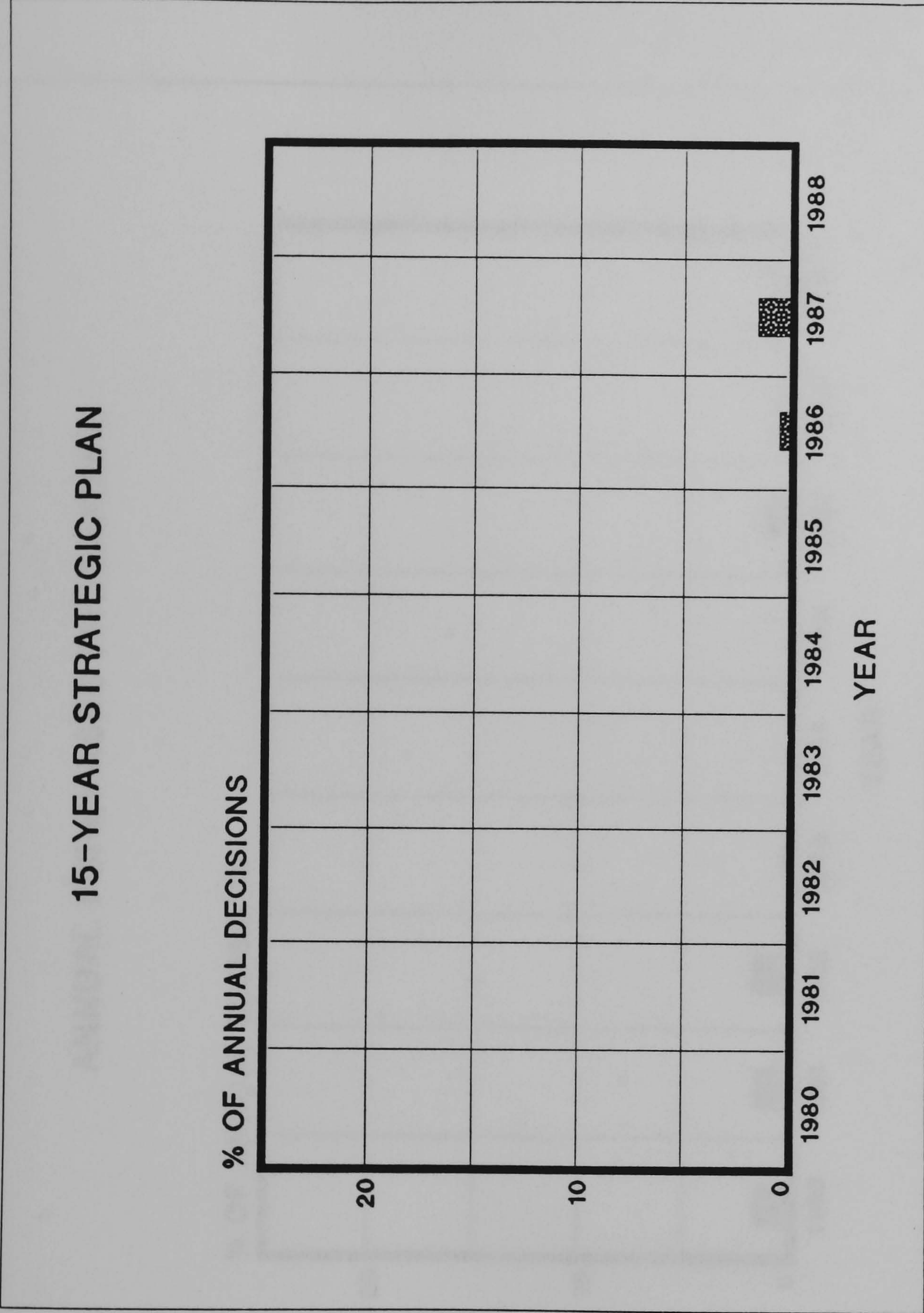


Figure D3: Distribution of Board's Decisions Concerning the 15-Year Strategic Plan Over the Period 1980-1988

ANNUAL PURCHASES PROGRAMME

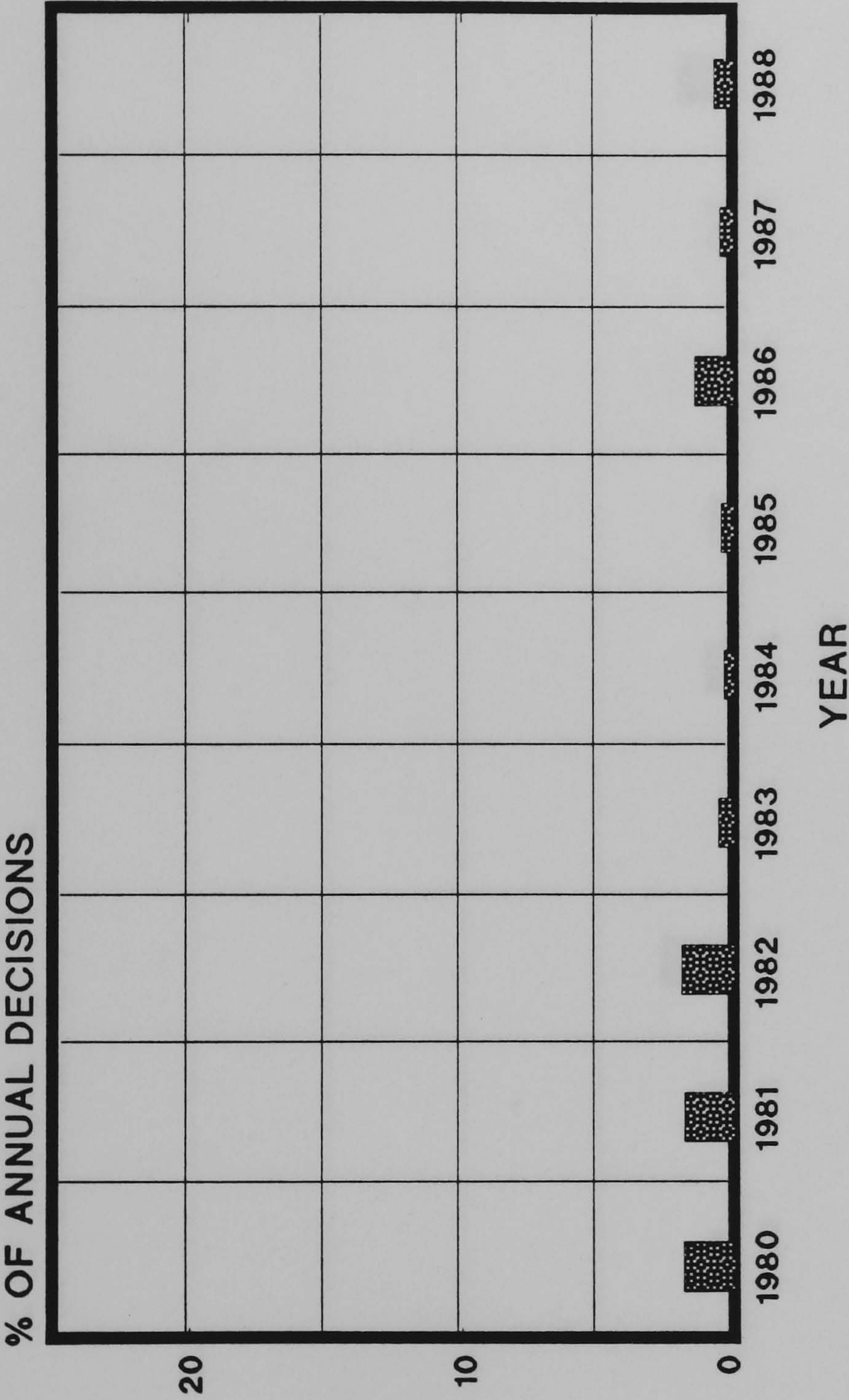


Figure D4: Distribution of Board's Decisions Concerning the Purchases Programme
Over the Period 1980-1988

OPERATIONAL BUDGETING

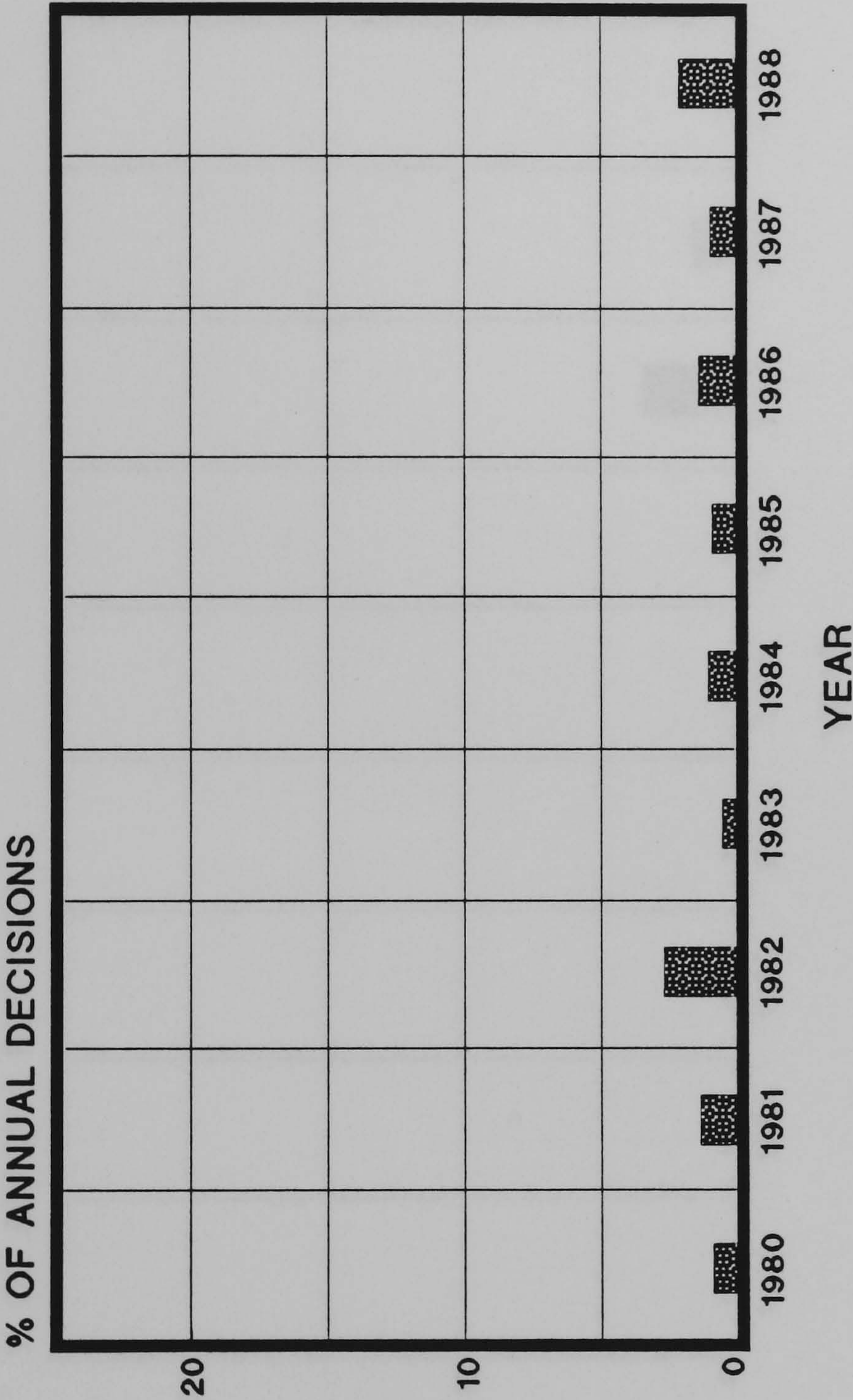


Figure D5: Distribution of Board's Decisions Concerning Operational Budgeting Over the Period 1980-1988

CAPITAL INVESTMENT

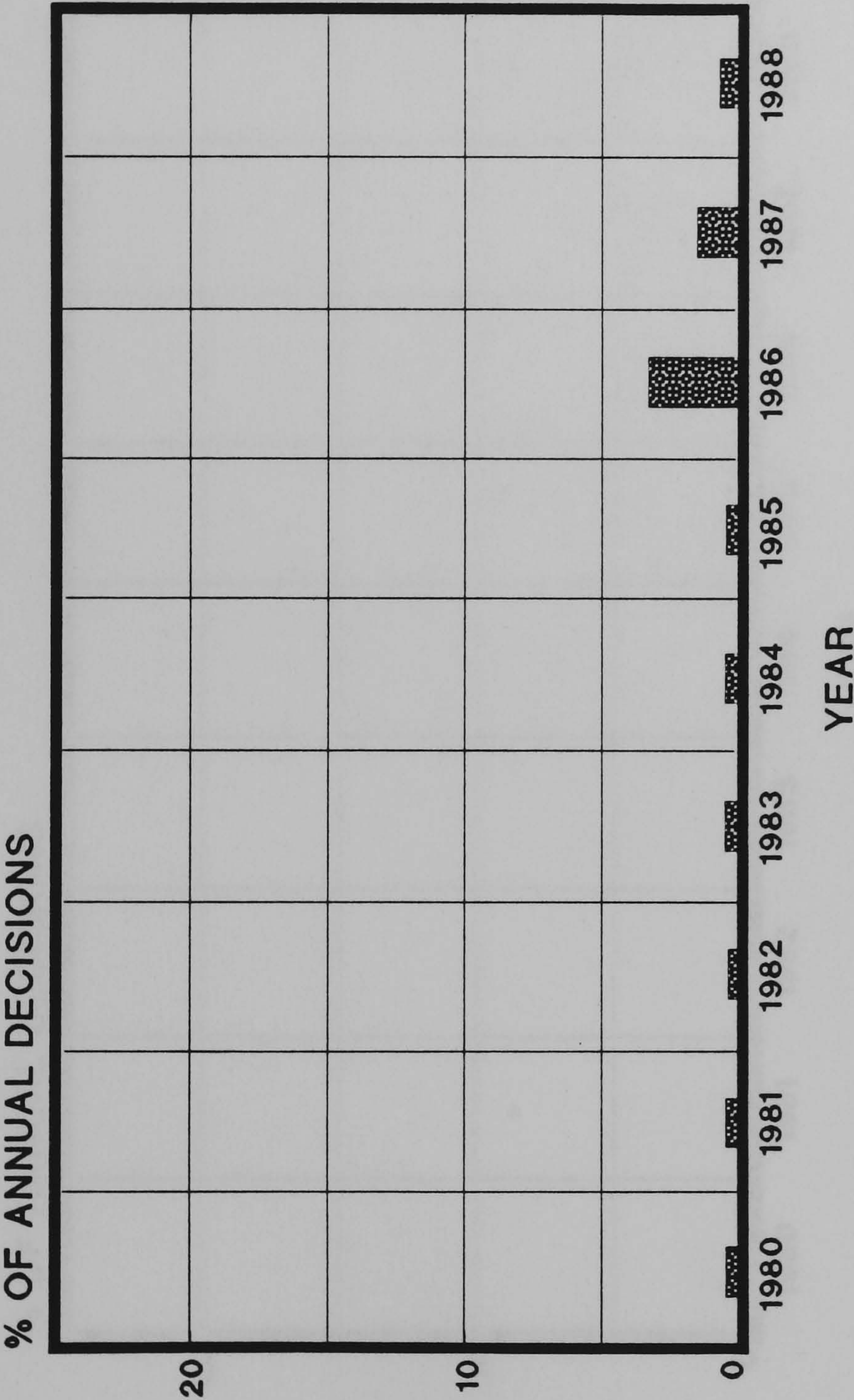


Figure D6: Distribution of Board's Decisions Concerning Capital Investment Over the Period 1980-1988

GENERAL MANAGER APPOINTMENT

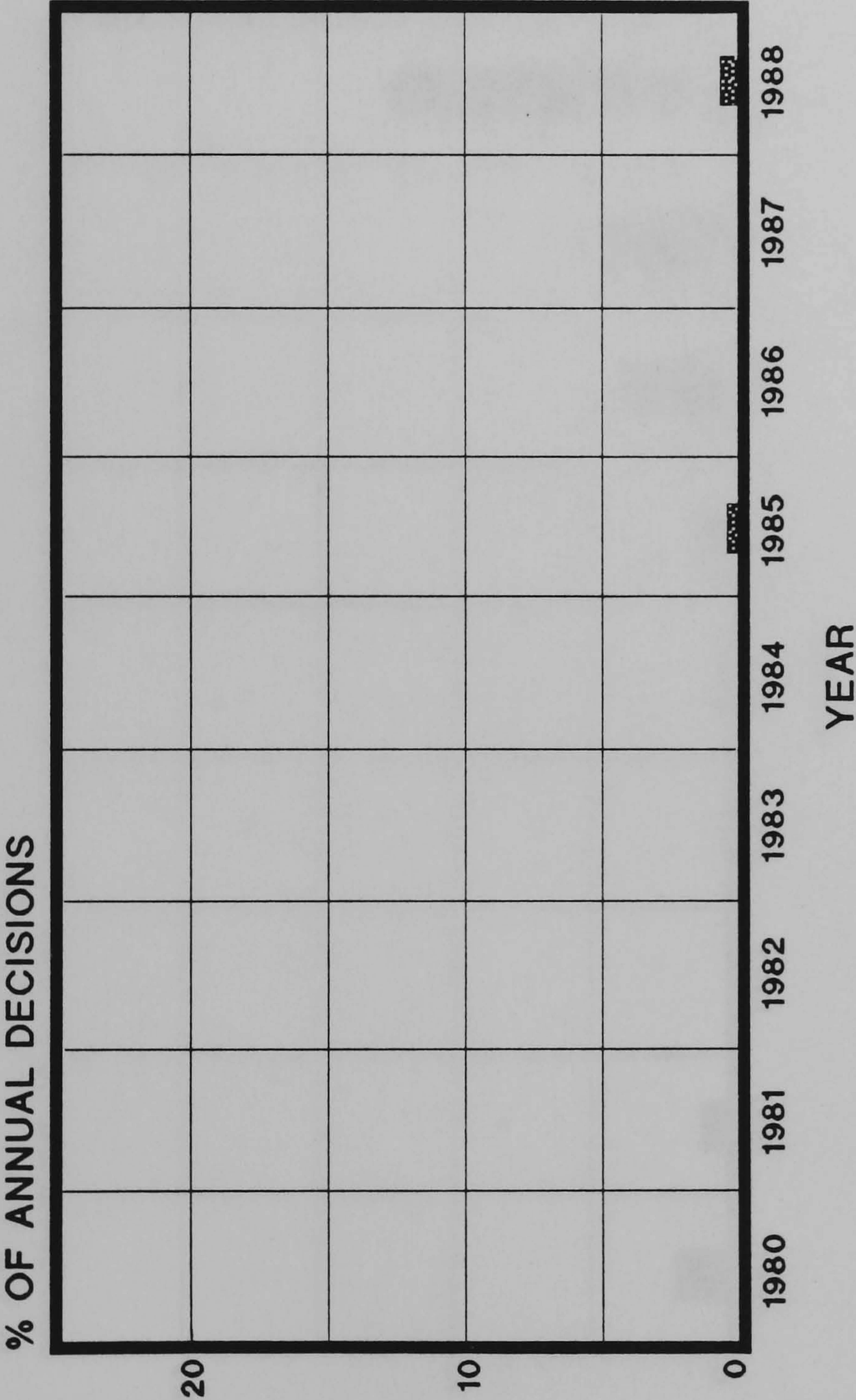
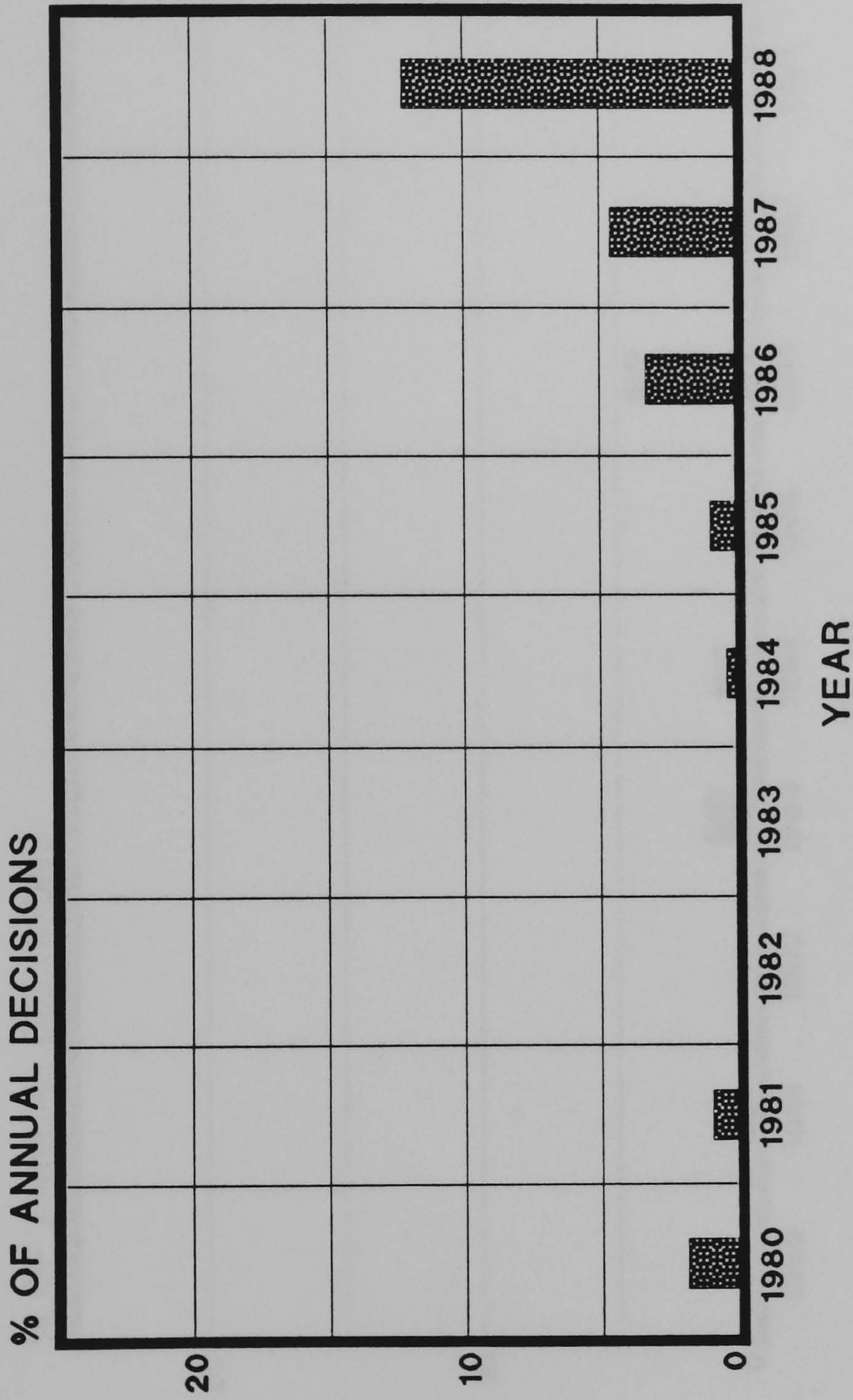


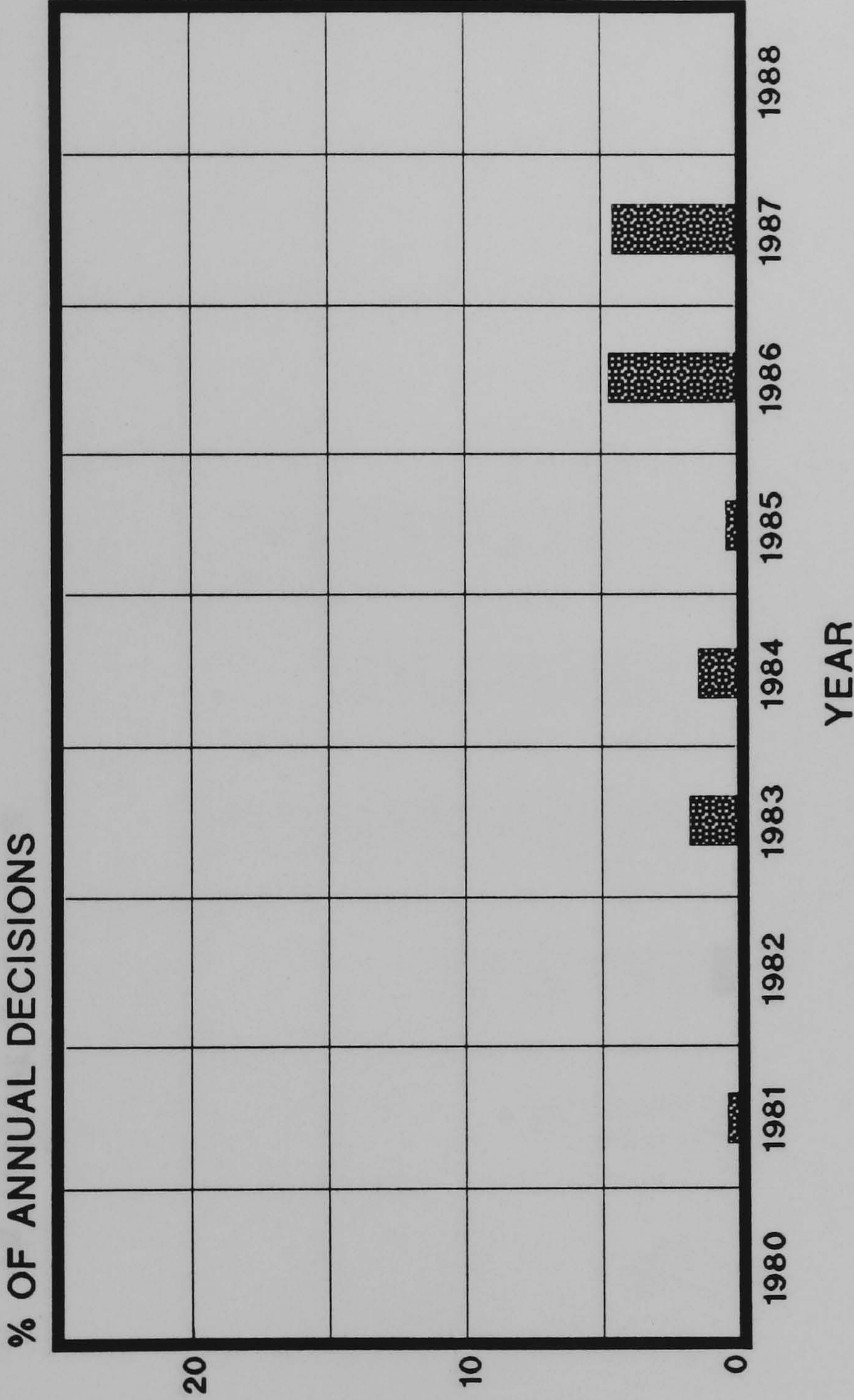
Figure D7: Distribution of Board's Decisions Concerning General Manager's Appointment Over the Period 1980-1988

LOANS



*Figure D8: Distribution of Board's Decisions Concerning Loans
Over the Period 1980-1988*

MANUFACTURING CONTRACTS



*Figure D9: Distribution of Board's Decisions Concerning Manufacturing Contracts
Over the Period 1980-1988*

MARKETING

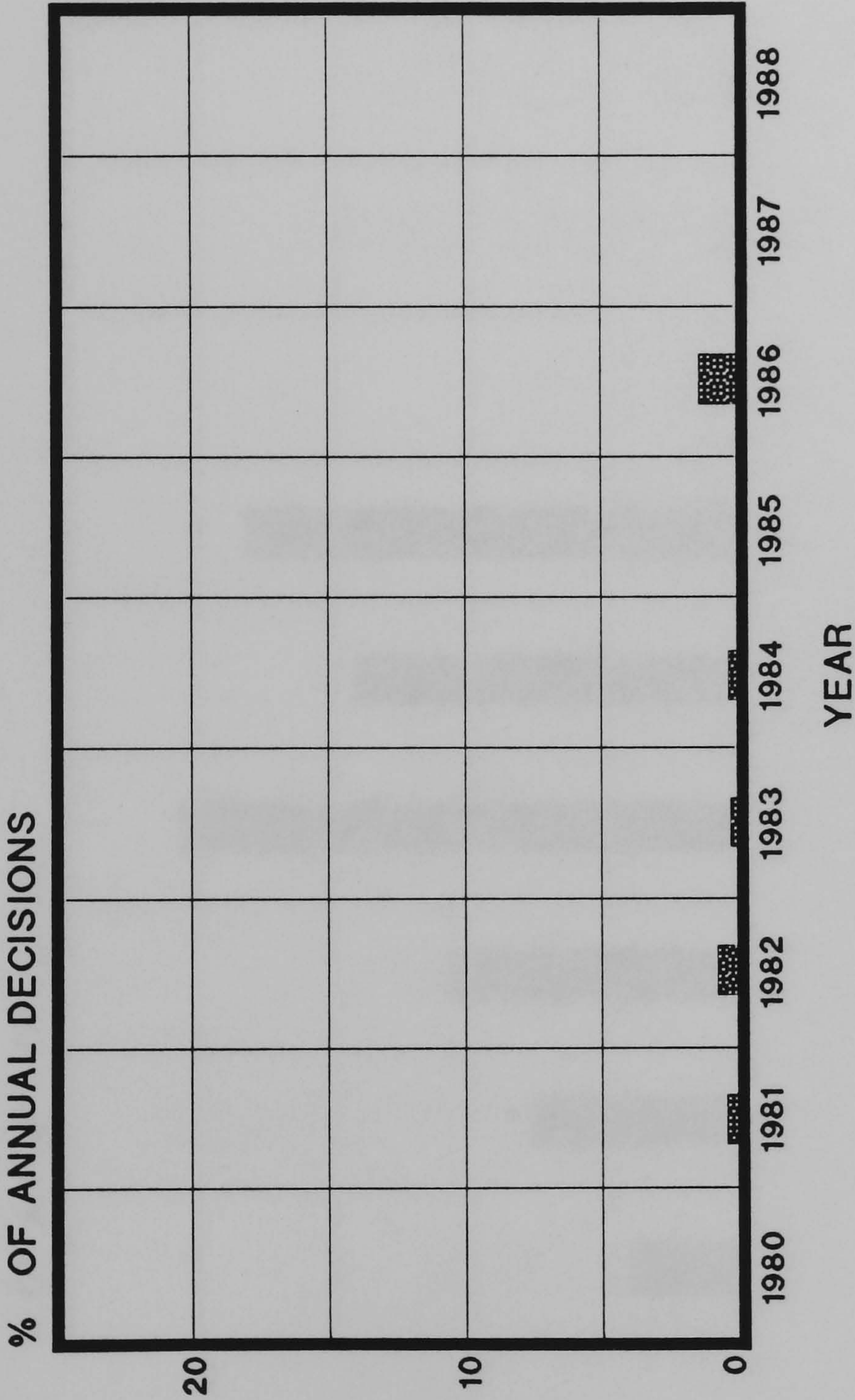


Figure D10: Distribution of Board's Decisions Concerning Marketing
Over the Period 1980-1988

MATERIAL/EQUIPMENT PURCHASES

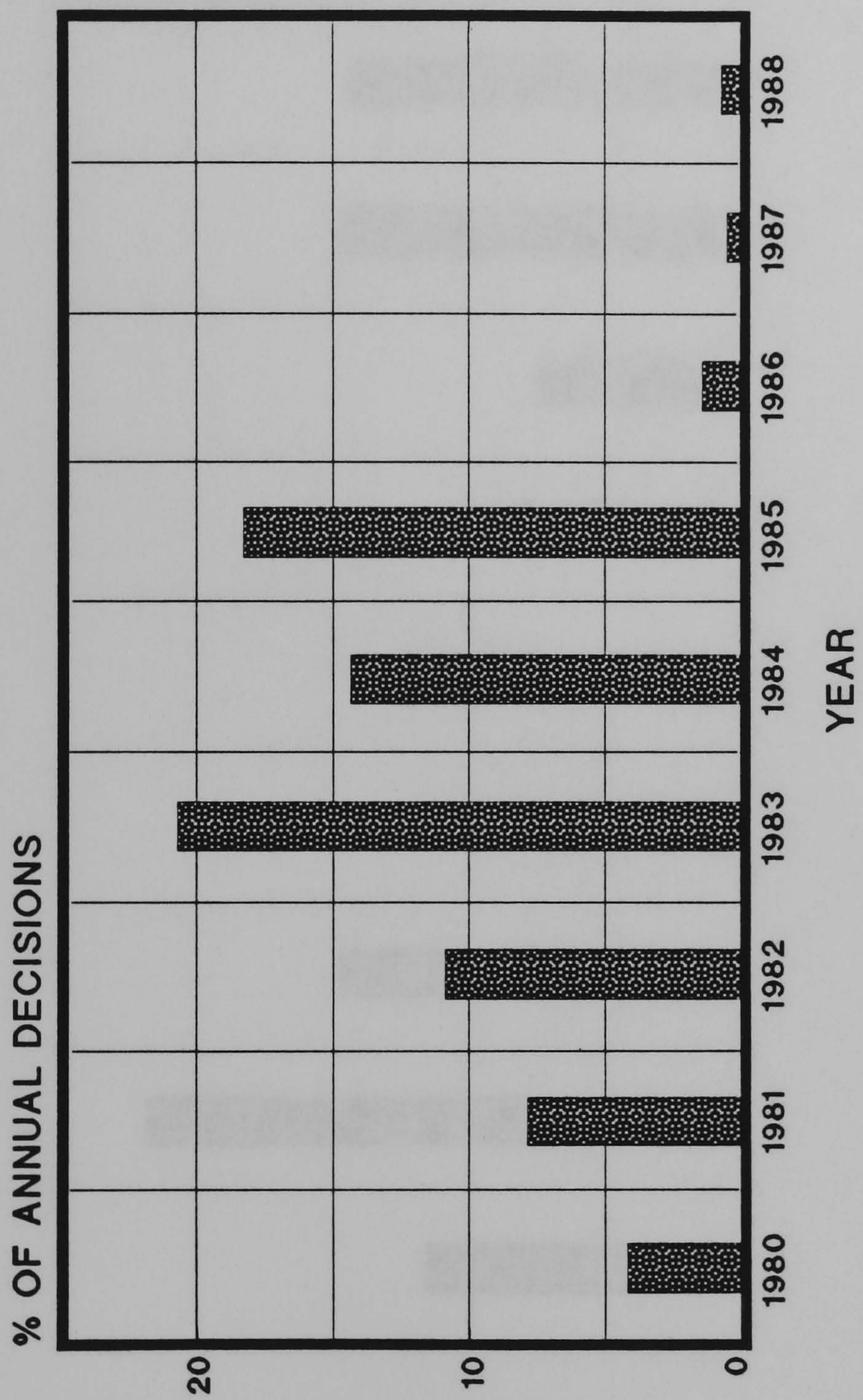


Figure D11: Distribution of Board's Decisions Concerning Material/Equipment Purchase
Over the Period 1980-1988

MODERNISATION PROJECTS

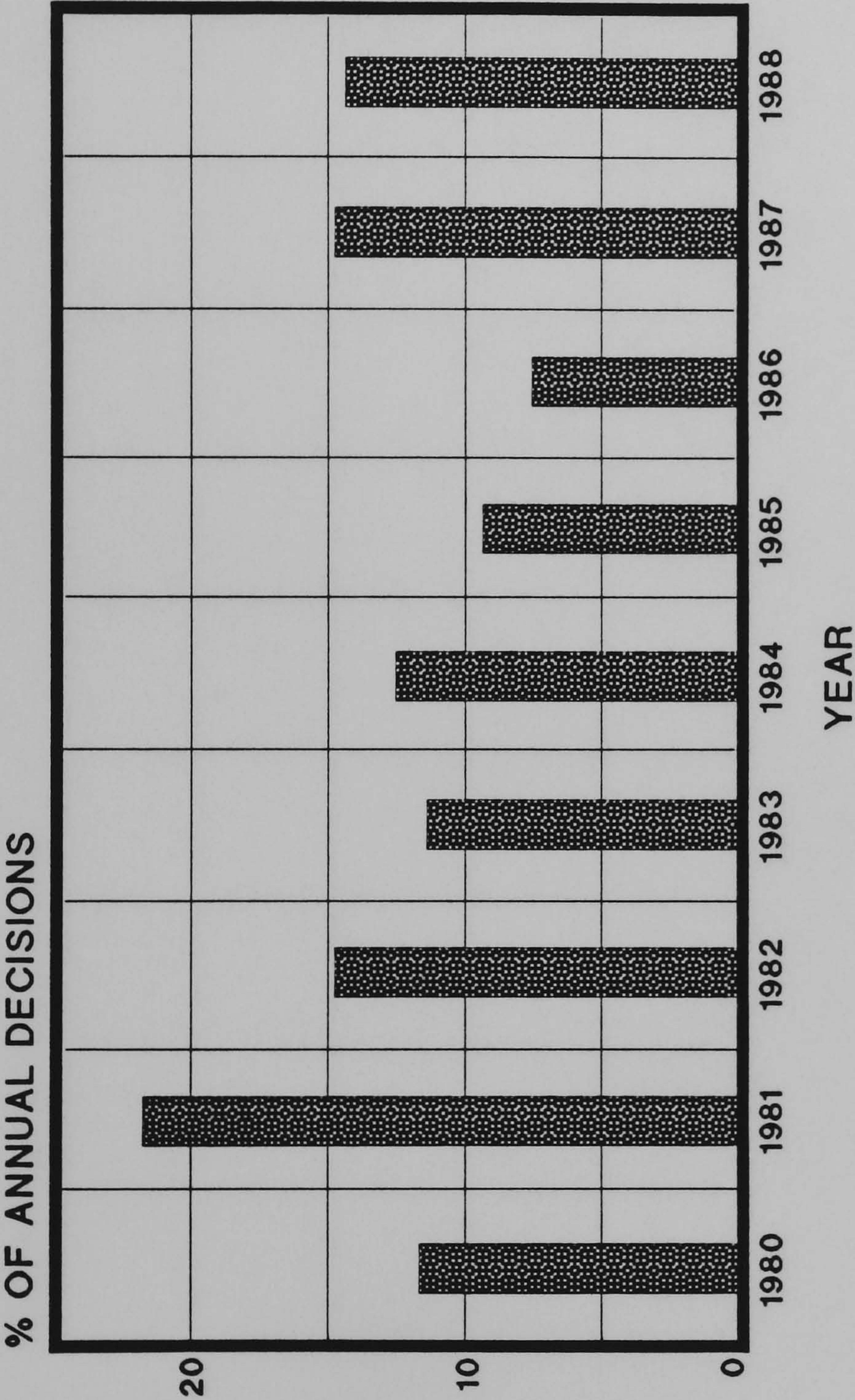


Figure D12: Distribution of Board's Decisions Concerning Modernisation Projects
Over the Period 1980-1988

ORGANISATIONAL STRUCTURE MODIFICATIONS

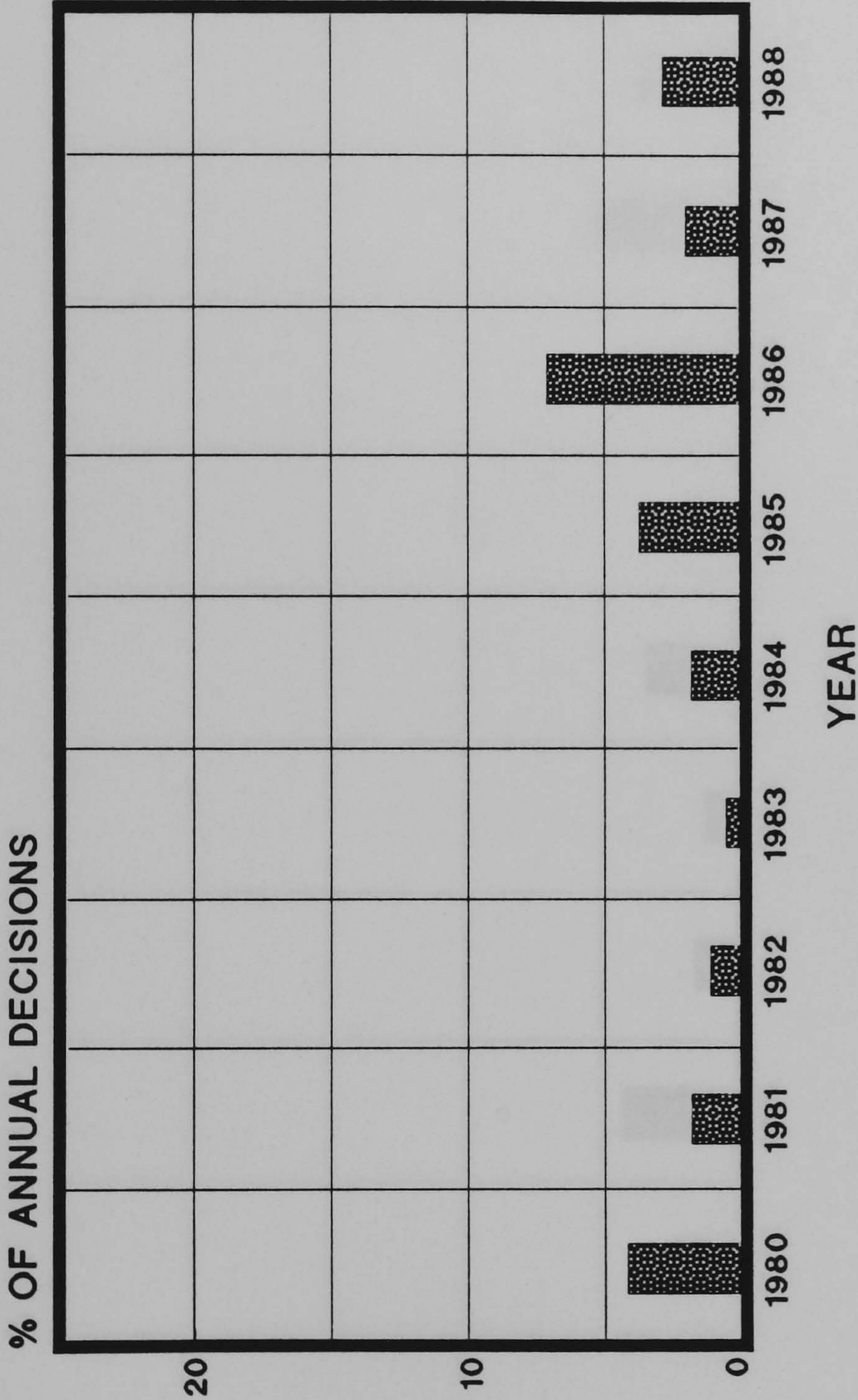


Figure D13: Distribution of Board's Decisions Concerning Modifications of the Organ.
Structure
Over the Period 1980-1988

PERFORMANCE MONITORING

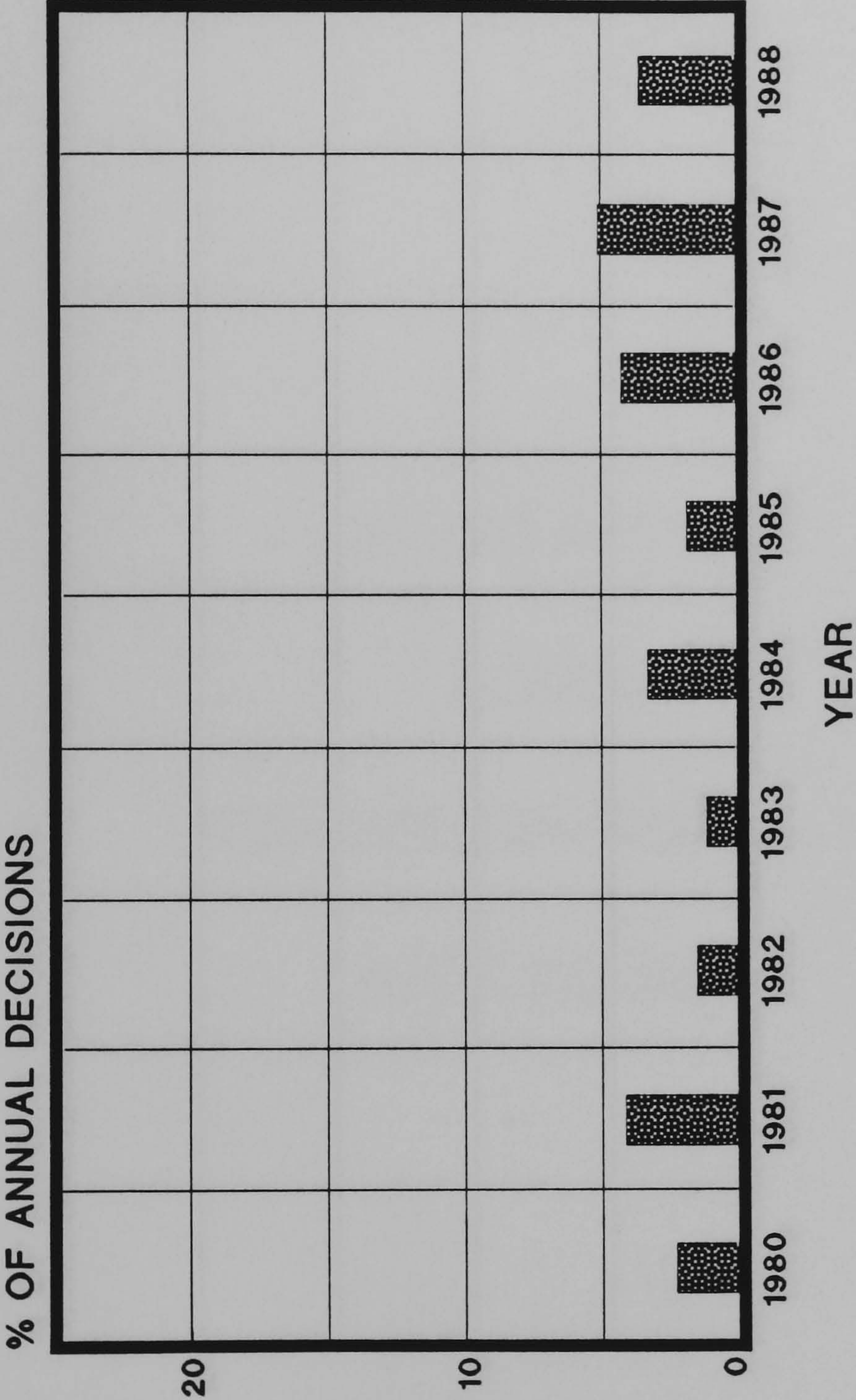


Figure D14: Distribution of Board's Decisions Concerning Performance Monitoring
Over the Period 1980-1988

FARE STRUCTURE

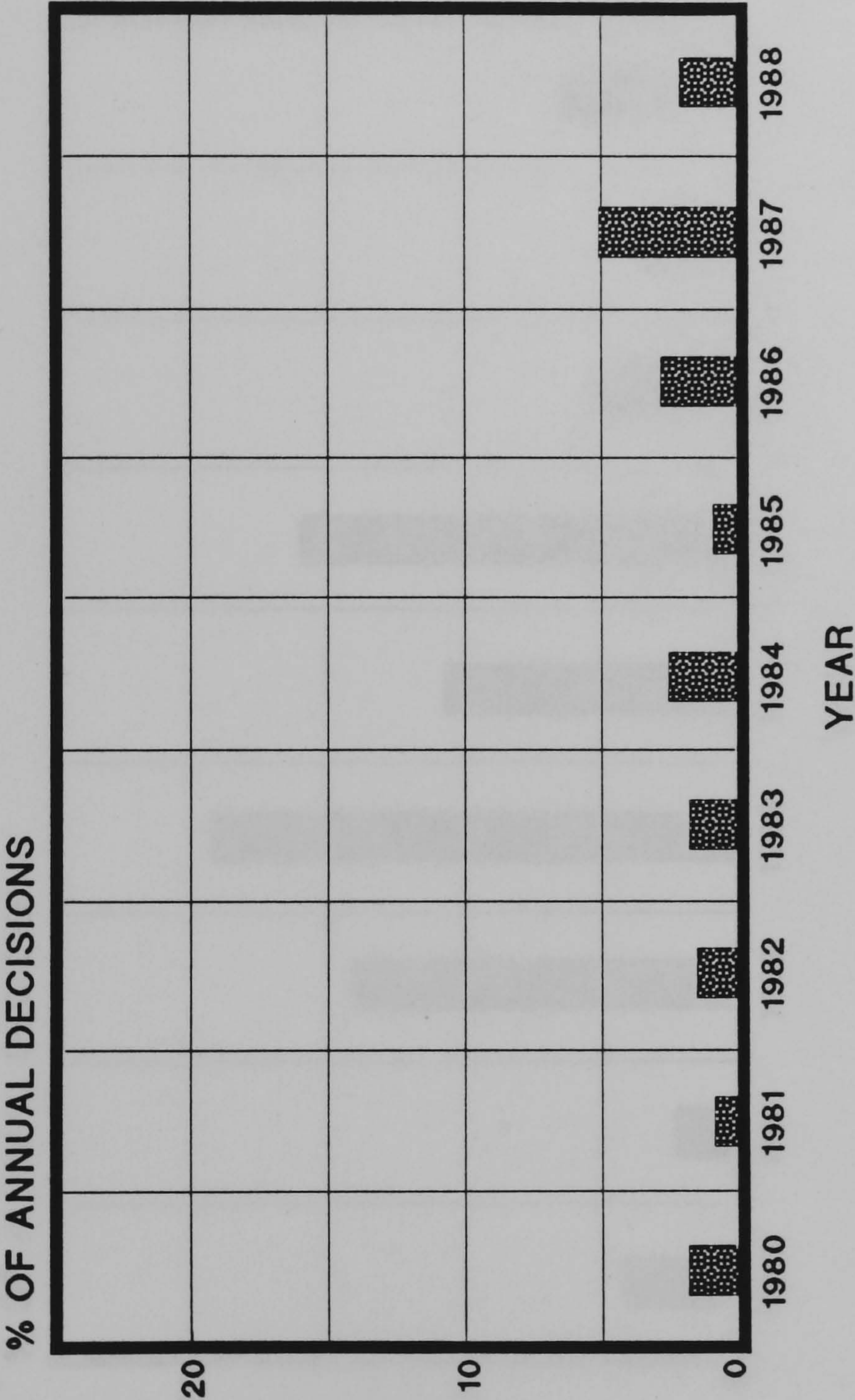


Figure D15: Distribution of Board's Decisions Concerning the Fare Structure Over the Period 1980-1988

ROLLING STOCK ACQUISITION

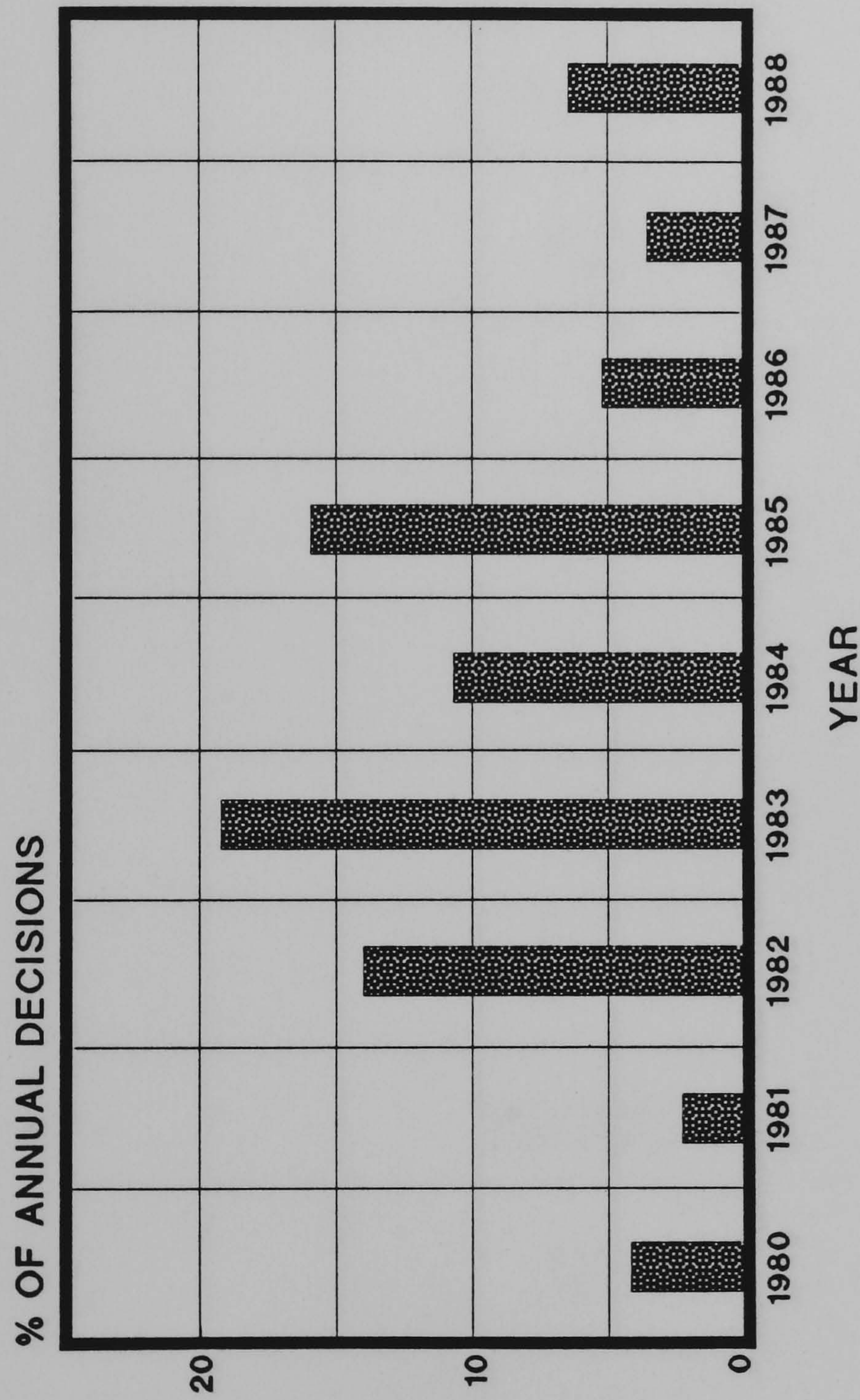


Figure D16: Distribution of Board's Decisions Concerning Rolling Stock Acquisition
Over the Period 1980-1988

SIDINGS' CONTRACTS

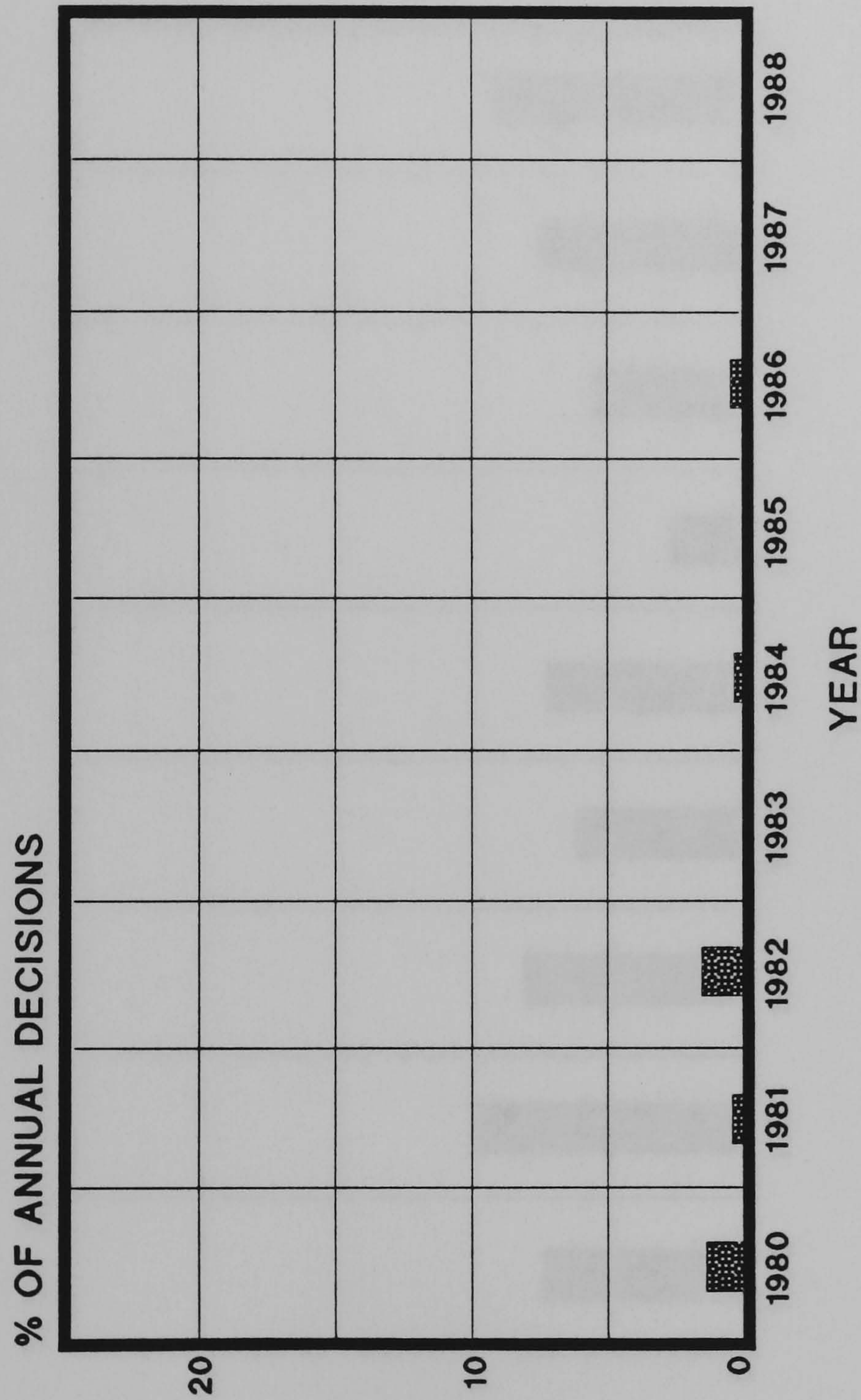


Figure D17: Distribution of Board's Decisions Concerning Sidings' Contracts
Over the Period 1980-1988

SPECIAL CUSTOMERS, FREIGHT

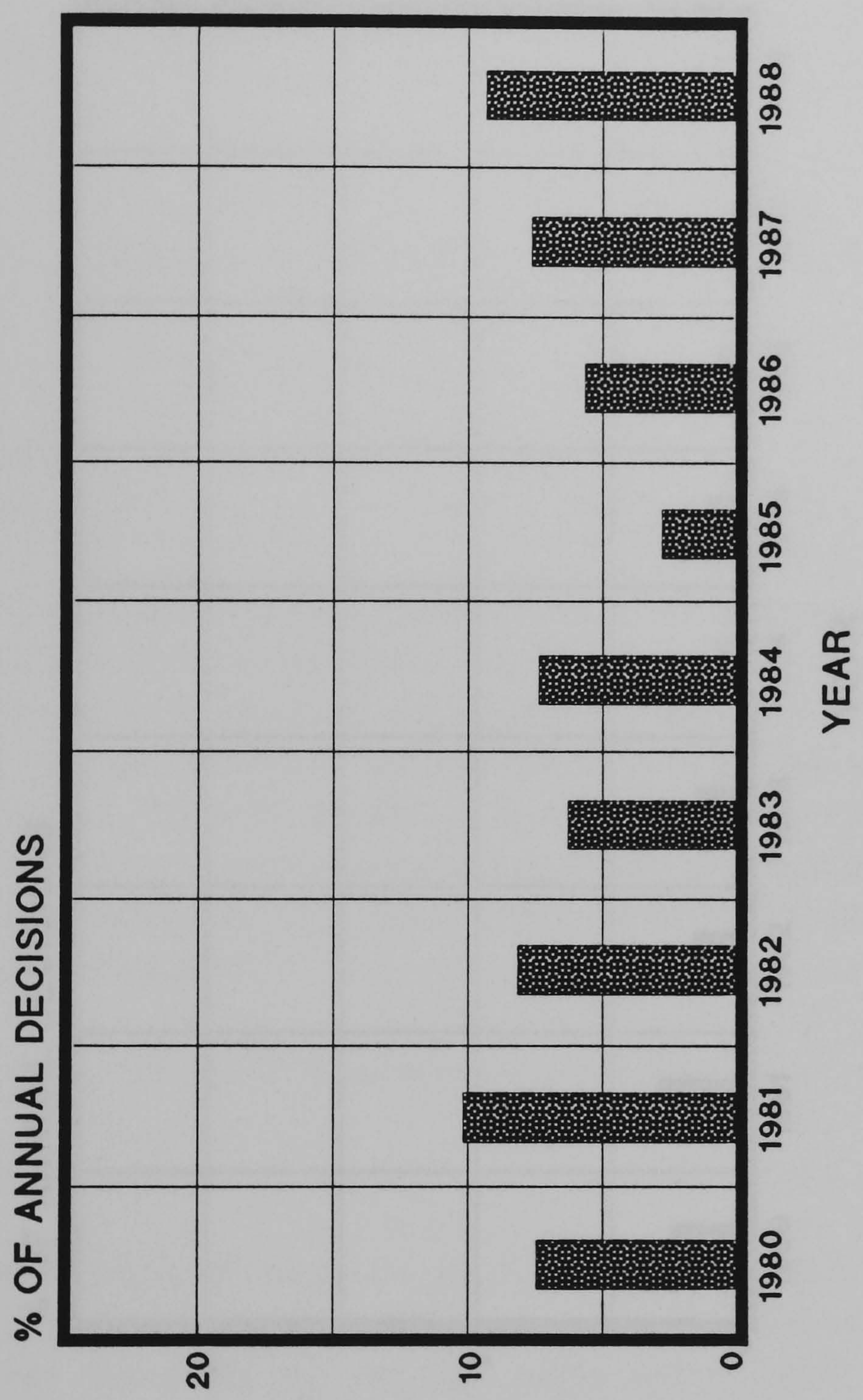


Figure D18: Distribution of Board's Decisions Concerning Special Customers, Freight Over the Period 1980-1988

SPECIAL CUSTOMERS, PASSENGER

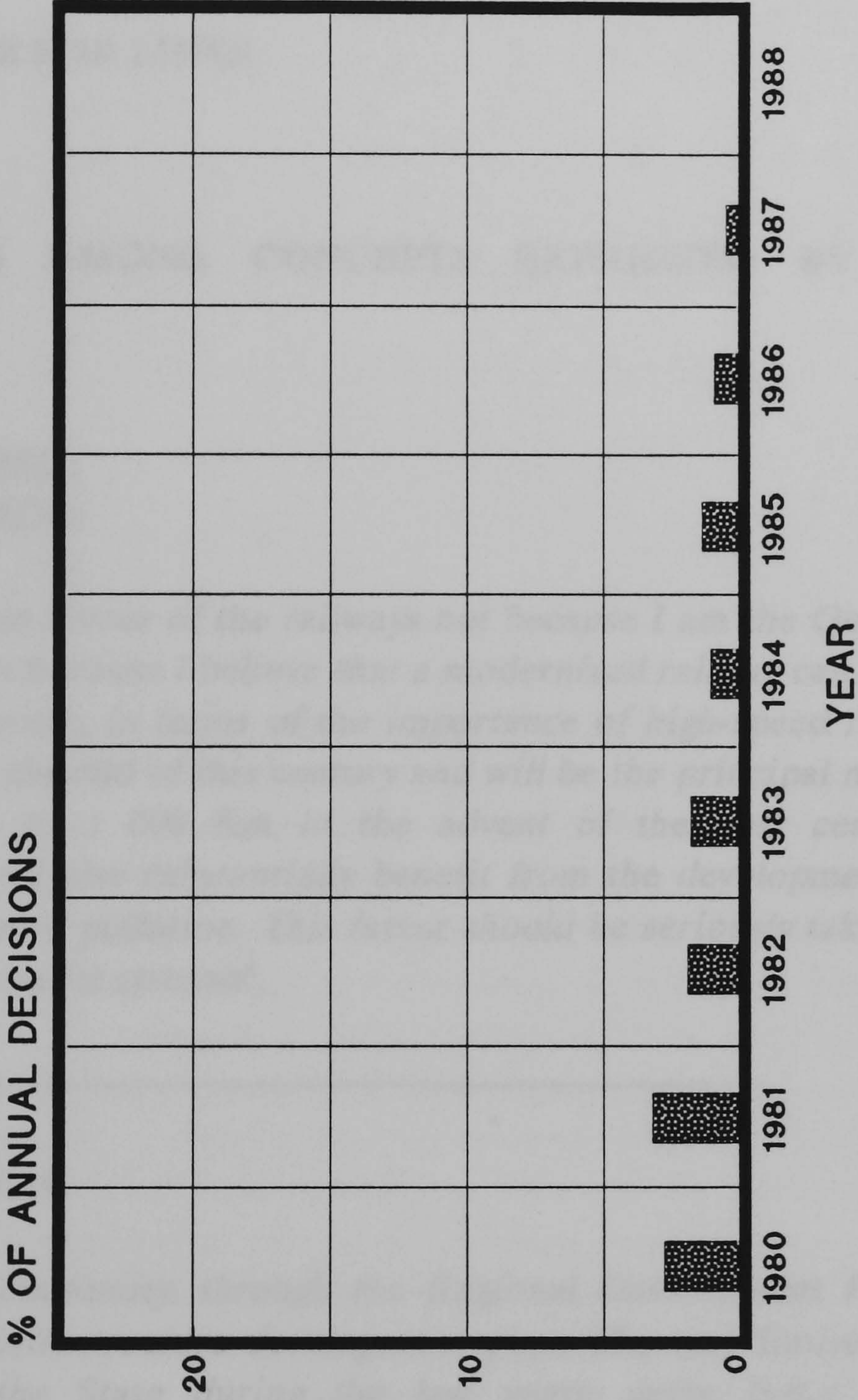


Figure D19: Distribution of Board's Decisions Concerning Special Customers, Passenger
Over the Period 1980-1988

APPENDIX E

RATIONALE FOR LINKS

E.1. LINKS AMONG CONCEPTS EXPRESSED BY THE GENERAL MANAGER

ROI15 + QMSG:

QMSG + PROE:

"I will speak in favour of the railways not because I am the General Manager of the enterprise but because I believe that a modernized railway can play a very important role in the future, in terms of the importance of high-speed rail transport that has developed at the end of this century and will be the principal means of transport for distances up to 1 000 Km in the advent of the next century. Environmental protection will also substantially benefit from the development of the railways, in terms of reduced pollution. This factor should be seriously taken into account when designing transport systems".

ROEF + ROI15:

"European Community, through the Regional Development Programmes, is partly funding the infrastructure development plan. The very limited financial resources granted by the State during the last years, make E.E.C funds vital for the continuation of the project."

QMSG + RTI :

RTI + LUC :

RTI + LNE :

"High-speed railways can prevent road traffic congestions. As you know, there are construction projects developing in the Athens to Thessaloniki motorway. However, if we are going to have the rate of increase in car ownership that other European countries have experienced -and the forecasts show that we tend to similar figures- then in 6-7 years time this motorway will again be congested. By attracting a certain amount of freight traffic from the motorway, we do not only help the National Economy but the car users as well, in terms of convenience of those who will still wish to travel on the motorway. Thus, primarily, we don't see our role as competitive to the other modes of transport but as supplementary".

ERECT + DOA :

CPRS + DOA :

RIRSPC + CPRS :

CCAQS + ERETC:

"What are today the activities the enterprise is engaged in? Whilst the enterprise is a transport company, it is mostly engaged in activities such as permanent way construction and maintenance. This is not a characteristic of a railway company. Beyond these activities the enterprise is engaged in the maintenance and repair of rolling stock (coaches, wagons, locomotives). It is evident that the organization operates either as a contractor or a workshop, repairing or refurbishing rolling stock. As you understand, these two main- stream activities are unprofitable, unrelated to the company's principal role, i.e. that of producing and selling quality transport. Consequently, there is a vague attitude towards "what we stand for". We get confused of operating the workshops, which could be run by either a private company or another public enterprise, completely different and independent from the Railways. Here I have to say that we are now in the process of clearing things up. By implementing the contract 294/83, we are going to provide the network with rolling stock manufactured in Greece (Athens area shipyards). Thus, potentially, we could have refurbishing/manufacturing bids in the future. With the railway promoting these sorts of contracts, we do not only assist the survival of these two enterprises (nationalized shipyards) but we also promote a sort of divestment from activities which, in any other case, would have been undertaken by the Railway".

"...The principal business of this company is transport and transport does not belong to the industrial sector; it belongs to the sector of services. It necessitates a totally different attitude. The problem we face is not to safeguard trains movement. The problem is to provide the customer with the best possible services and this should be our first aim".

LOPT + CCAQS:

"Personnel training will help us to possess this new attitude of a service company and these services could range from intercity services to suburban services".

RGIIMP + LAB :

LAB - LOD :

LOD + LOGS :

RGIIMP + ROI15:

"There is an obligation on the part of the Greek State to cover the deficits that derive from the Railways operations; and this State's contribution is huge. Every year the Greek State pays 30 billion drachmas to cover the railway's operational deficit. When the State is not in a position to cover the deficit, then it allows us to borrow under its guarantee. It is more preferable to direct a portion of this amount to investment in modernization which, as shown in the recent feasibility study, is highly remunerative".

CIOS + CCAQS:

LOPT + CCAQS:

UOIS + CCAQS:

LOEG + UOIS :

LOEG + LOPT :

"By organizational restructuring of the operations according to the guidelines I just mentioned, by making the most of information systems use and training programmes, promoted and financed by the Community, we can implant in the enterprise the spirit required in order to put itself at the service of a customer enjoying a pleasant voyage".

FDETU + IFS :
 IFS - LOD :
 LOD - LNE :
 QMSG + LNE :

"There is also the law of value regeneration. In our case, this should be reflected into the fare structure. When we say that today we have the lowest fare in the market, this means that as the company is subsidized, a big part of this fare is being paid by the taxpayer, not the user. I believe that, except for some social groups which have to be assisted, the users must pay for the value of services they use. Gradually, we have to reach the point where the larger part will be paid by the user and our society through clear arrangements will grant rights to certain users to use transport modes at a reduced fare. This also means that the companies will get in return subsidies equivalent to the transport cost".

"Based upon a recent study, we argue that even if rail fares are doubled, traffic volume is going to triple on the Athens to Thessaloniki "commercial" axis. Consequently, if today we collect 5 billion from it, the combination of fares increases with the traffic volume increase could give us encashments of 30 billion. Yet the current operational deficit is less than 15 billion. Thus the modernization project is highly repaying".

E.2. LINKS AMONG CONCEPTS EXPRESSED BY THE ASSISTANT G.M.

DGWPR - DBA :
 DBA + DCSF :
 DCSF - ROI15:
 DGWPR + LISL :
 LISL - DAMA :
 DAMA + DOS :
 DOS + CDTH :
 GPRDI + DAMA :

"We are now in April 1989 and we don't know which is the level of financial resources approved by the Government for this year. We know our proposal, we know approximately what is going to be given, but this isn't really approved because we haven't even found the sources of financing. Would they be public investments, would they be borrowing? We have to negotiate with banks on the rate of interest and the terms of the loan. At the end, you feel like the runner who never touches the finishing line".

"This is a difficult period for there have been many changes in the way we operate and in the government's interest in the railway development. Socialization, emphasis on the railways, retreat because of weaknesses, emphasis on inland industrial development. All these are new, first-experienced issues. Thus, an entanglement in the organizational structure has occurred because the managers, being uncertain about their responsibilities, push decisions up to the higher echelons. Therefore, a bulk of decisions, that under other circumstances would have been made at lower levels, are made at the top".

QCDS + LOP :
 QCDS - RDS :
 IEIP + DBEAC:
 DBEAC - QCDS :
 RDK + QCDS :

"A big percentage of our failure today is owing to the fact that nobody in the past cared about succession. You choose someone for a post and you train him for it. This has never been contemplated. When the time for promotions comes, all are graded by

their superiors at 58 or 59 on a scale with a maximum of 60 points. Yet if all are so exceptional, why the organization stands at the brink? Thus, a degradation of structures and a degeneration of institutional laws occurred, within an atmosphere characterised by indifference."

QGAB + LCB :

QEAB + LCB :

LCB -NFPM :

"The Board does not have the status an executive board should have. That is of a Board aware of railway matters and devoting time to their study. The appointment to the Board, both on the part of the Government and the employees, is coincidental. The limited capacity of some Boardmembers to understand economic issues leads to the employment of bureaucratic processes; the more ignorant you are, the more you want to avoid responsibility, the more you want to secure your decision, the more you pull back the discussion."

DGWPR + ROI5 :

DGWPR - UALF :

ROI5 + ROI15:

"The primary concerns of the Board should be performance monitoring, and the following up of the 5-year business plan which consequently affects the long-term development plan. Unfortunately, all such decisions have been arrived at within minutes. Why is it so? I have to give the Board some right. Nobody feels certain about funding and everyone knows that after the approval of the 15-year plan there was no answer for the second 5-year business plan submitted recently... In 1983, there was an emphasis on railway development. Thus, we employed new engineers to study and supervise the development projects. We had an initial governmental approval for a 45 billion funding concerning the first 5-year business plan for the period 1983-1987. The new engineers arrived but the organization never received even half of this funding".

UALF - LCHL :

"The Board can exert control only after the rate of funding is ascertained".

DBA - CLTP :

LOB + CLTP :

"We are not used to look into the future and plan for it. There is a lack of hope, a disappointment. Yet, what plan can one design when he asks for 30 and he gets only 14?"

QGAB - DPOM :

QEAB - DPOM :

DPOM + RAGED:

RAGED + CDDCG:

CDDCG + IOSB :

"You establish a Law for the 'Socialization of Public Enterprises'. The people you appoint to the Board must be capable of understanding their role. You appoint a workshop worker to the Supervisory Board. What policy will he approve, what direction will he give? In A.S.K.E. (the Supervisory Board), there were government's representatives as well who didn't understand what railways are, how an enterprise should operate. Thus we only had a political confrontation. As a result, the government inactivated A.S.K.E.'s essential competences, in which, by the way, governmental representatives never participated. According to the legislation, A.S.K.E. submits medium-term and long-term policy proposals to the government; Has the government ever, during these three years, invited A.S.K.E. to discuss with? Never. The General Manager directly communicates with the government. Whenever a matter involved governmental approval, we always had a formal approval, no matter how important the issue was. Is anybody in the Government capable of deciding for (other than financial) amendments to the company's proposals?"

UALF - LPT:

"The lack of a constant rate of funding was the reason behind the negligence of personel training. Our planning efforts are not time wasted over drawings. I believe that if we had a constant rate of funding we would act differently. In that case, we would be controlled by A.S.K.E. in the sense 'you have asked me for 20, you did only 10'. Then, we could also discuss the General Manager's responsibilities..."

LCHL + QCDS:

"We have a formal system of promotions based on the evaluation of six different characteristics; managerial, professional, mental, moral, physical, and psychic. They are measured on a 10-point scale. It strikes badly to mark someone with a 7 or 8. You find a whole Department coming up with a list of 50 people, 46 of which have marks 56 to 57 at a maximum of 60. Thus, subordinates get used to high marking, and when someone gets a 52, that is a 8 to 9 on average with maximum 10, (s)he is hurt. Every year, lists of candidates for promotion are examined by the respective committees. They have a rank let's say 58, 57, 54 out of 60; that is, they are all recommended by their superiors to be promoted by selection, which means that they are exceptionally good. What can the promotions committee do under these circumstances? It promotes the first in the list and then you catch your breath. How could this employee be promoted in this way? Who really controls, who have the guts to do it? .. Shouldn't we ask 'Who is the one that marked?' Is he perhaps someone marked himself for 30? And is it that when he judges someone better than him marks for a 57?"

E.3. LINKS AMONG CONCEPTS EXPRESSED BY THE GOVERNMENTAL REP. 1

RGF + ROI15 :

AIASF + ROI15 :

RCNTC + ROI15 :

RDCRS + ROI15 :

RDNOS + ROI15 :

ROEF + ROI15 :

NRSP + ROI15 :

"In 1983, a technico-economic study prepared by the Department of Planning and Organization indicated that the cost of the modernization plan was 200 billion at 1983 prices. This is the plan whose basic lines we are following. Certainly, it has to be adjusted to the prevailing conditions and the annual cash flows. We make efforts to 'escape' from the State's funding and to consider other sources such as the E.E.C. We have recently submitted to one of the Regional Programmes, concerning improvements in transport systems in the E.E.C. countries, a request for funding. If this request is granted, then the rate of implementation of the Rail Plan will be accelerated. This Plan incorporates all the company's goals which, being materialized, the whole project will also do. We basically have to modernize both the permanent way, the rolling stock, and the operations system by improving our services".

"We need specialized railway engineers. It will accelerate the modernization plan because the engineers we now have are engaged in day-to-day operations and neglect long-term planning".

RDCRS + RCNTA:

RDCRS + RKHA:

RGF + LAB:

LAB + RDCRS:

"As far as rolling stock is concerned, its replacement is accelerated by the big 294/83 contract which is now progressing. It was signed in 1987 between a consortium of German industries and the Athens area shipyards. By the end of 1991, all the units ordered will be introduced into the operations".

"The organization pays for this project and supervises its implementation. Thus it obtains a certain level of know-how. The problem in this contract as well is funding. At today's prices, the estimated cost of the contract is approximately 40 billion. To guarantee its funding, we are considering, apart from Government's funds, alternative sources such as borrowing or leasing".

SIED + VSC :

VSC + LESB:

LESB + LOPM:

"A.S.K.E. (the supervisory Board) should play the role attributed to it by the 'Socialization Law'. Social control is an issue which, through critique and formulation of solutions to problems on the part of the stakeholders' representatives, could not only lead to the modification of the Board's structure but also promote the development plan.".

"The Supervisory Board's competencies are not such as to impede the enterprise's functioning. We would not stop operating if there wasn't a supervisory Board. A.S.K.E.'s interest is in strategic planning issues, and in operational matters at a level of overall principles. There was no chance of course for A.S.K.E. to see an annual balance sheet materializing some of these things, so that we could discuss about performance monitoring. A.S.K.E.'s not proper functioning is a problem. But we are not stuck into some issues just because of this; simply, we don't have approvals of our proposals or actions".

LSRPE + SPI :

SPI + PAFB:

PAFB + CAOG:

"We established a new pay-scheme. O.S.E.'s employees have always been the less paid among those of the public sector. Because of this, some more money were given to them".

"Certainly I don't claim that it is the perfect system. Some problems appeared during the implementation of fringe benefits, and this has created problems among some occupational groups. Nevertheless, it is now better than it was in the past".

CDPP + DR :

GPKFL + CDPP:

RINPO + CDPP:

"By improving our means of production -new rolling stock, operational improvements, new or upgraded track- and by incorporating them gradually into the operations, we can ask for bigger fare increases. Yet the government insists to keep them low. We know that if we could implement our views the enterprise's deficits would disappear".

CSL + COS:

CSL + CWRC:

TUI - CWRC:

TUI - COS:

"The Socialization Law set the need to restructuring the enterprise's activities and to adjust its legislative framework concerning work rules and regulations to the new philosophy inaugurated by it."

"Work rules and regulations and organizational structure have to be changed because of the Socialization Law, but the Trade Unions had different views and managed to block them at some Auditing Bodies."

E.4. LINKS AMONG CONCEPTS EXPRESSED BY THE GOVERNMENTAL REP. 2

NFRM + NOGF :

NFRM + ROI15 :

"Any one could see that modernization was vital for the enterprise. This renders government sensible to the enterprise's investment needs."

DEGCR + LPM :

DPQRDF - DEGCR:

"Certainly, the enterprise's operations could be improved. Deviations showing up in the quarterly reviews between the budgeted figures and the ones actually produced is an indicator of how well we (Department of National Economy) and O.S.E. did our job."

GEP - LAIP:

GEP - LAB :

GEP - ROEH:

"This policy launched in 1985 restricted public enterprises from hiring employees, and set severe limitations to their expenditure... Of course this has affected the flow of investment as well; sometimes the boundaries of certain definitions become blur".

LAIP + RIMP:

GPKFL - DPP :

"Without money all the projects slow down."

"It is a governmental policy to keep fares low to allow for people who do not have much to spend to use the railway... Every year, proposals for fare increases take their way up to the Department of Transport, the Department of Commerce, and the

Department of National Economy. At the end, a fare policy is agreed upon which never could go beyond government's limits, no matter how strong organizational arguments there existed".

E.5. LINKS AMONG CONCEPTS EXPRESSED BY THE EMPLOYEES' REP. 1

DRSP + NEG :

ROI15 + LRC :

LRC + NEG :

"In the introductory report of the 15-year Rail Plan, it was clearly described how the railway would benefit from the implementation of this plan, by becoming competitive and profitable. However, it would not only directly contribute to profits for the National Economy. Domestic rolling stock manufacturing should also be considered; it has a significant domestic added value and a relatively decreased need for imports".

RGF + LAB :

LOB + LAB :

"The level of the annual budget is defined by the government and some modifications that may arise are also determined within the framework that has been set".

"The part of the annual budget concerning investment is covered both by borrowing and Government's funding".

IRTU + LEP :

IRTU + LA :

LA + LSO :

LSO + LSSP :

"It is self-evident that the better relations the enterprise maintains with the trade unions the better the employees perform. Especially during this year, our relations with management were the best ever. For the first time a labour agreement, independent from the overall governmental public service policy, was signed... It provides solutions to demands of alternative occupational groups. Beyond this, the most important is that top management was bound to make alterations to the organizational structure and to different rules and regulations concerning the employees".

"O.S.E. is a service organization. It needs specialized employees in market research, in information technology. Having only a perfect structure is not enough. You owe to have people to provide you with the work you need. Unfortunately, O.S.E. wants to hire these people by offering salaries which make them flee away."

NBTA + GPPRS:
GPPRS - RSH :
RSR + LOP :
LTCA + RSH :
LTCA + RDRSM:

"Bilateral agreements are not signed by O.S.E., they are signed by the government. The government guides the enterprise in way that a part of its procurement is channelled through bilateral agreements. This is a very important factor that influences the quality of our services. Let's talk about rolling stock. There is a big difference in reliability between Canadian or American locomotives and locomotives manufactured in Eastern European countries. Definitely, technical experience of the staff should also be considered. However, this procurement policy affects negatively our performance".

"In my view, procurements that concern the railway's modernization and development should not be subject to the State's trading policy. In such a case, the company could buy more reliable products. Finally we could also solve the problem of multiplicity in types of rolling stock. At the moment, we have 40 different types of locomotives. It is out of any logic".

"By satisfying our needs with long-term agreements for rolling stock manufacturing and maintenance we could lessen the problem of multiplicity of types and prepare the grounds for a gradual divestment from these activities".

LOT + DOPT:
NSEC- DOPT:

"We need continual training, especially in issues related both to the technological and the operations functions of the railway. It is not enough to compile a training programme. You should create trainers with the proper knowledge. There have been some efforts towards this end; we are building a Training Centre which is not ready

yet; on the other hand, people are sent to be trained abroad in countries such as Switzerland, France, England."

GPKFL - DPP :

DPP - PDRSB:

GDRM + DPP :

"At the moment, the railway's passenger services tariffs are not only below cost but also below competition, because of government's wish to exercise social policy. By keeping fares low, the organization's operational deficit significantly increases year by year. If for example we have an annual deficit of 10 billion, charging with increased fares we would have a deficit of 8 billion. This difference is not granted by the government in its own right. Although last year we compiled a social budget and submitted it to the supervisory Board, this budget was not discussed. I imagine that when A.S.K.E. will function properly this deficit will appear separately in the operational budget not as it is today within the operational expenses but as State's social policy".

"In order to have a precise pricing policy, the State should define what it expects from the railway".

NOP + IOSB:

IOM + IOSB:

NIBE + IOSB:

IOSB + LOC :

"A.S.K.E. cannot function efficiently because it is a large board (27 members) and cannot convoke in frequent meetings. Thus, when they understand the significance of performance monitoring gets and when they do convoke, there are so many preceding subjects that they don't have the time to discuss them all. To me, the most important function that A.S.K.E. should perform is control".

E.6. LINKS AMONG CONCEPTS EXPRESSED BY THE EMPLOYEES' REP. 2

ROI15 + ETP :

ETP - LOS :

ETP - LCE :

"There has been an over-reliance on technical projects; the rail plan has only been perceived as investment in construction works. The new General Manager has changed this attitude. Now the emphasis is put on both the delays reduction/passengers comfort and on the employee. The plan, as being materialized by the former General Manager, had placed the engineering projects at the centre of the enterprise and the customers and employees at its periphery. This is reversed now".

LWSRP - JR :

RRSH - JR :

IPD + RRSH:

GVOP + RRSH:

LEBP + RRSH:

"There are many explanations for the rolling stock problem. On the one side, we have the inadequacy of our units to indicate what they want and how they are going to get it. On the other side, we have the very economical bid proposals coming from the Eastern countries and the bilateral commercial agreements that put obstacles in the process because the Department of Commerce has the final say on any international trade agreement."

"The problem of service reliability has nothing to do with the single-tracked parts of the network. It is a traction and rolling stock problem; no one faced it as such. Obviously, rolling stock issues have been discussed for a long time. However, after the change in top management, they are now in the way toward a solution".

CEGB - RCMP:

QTS - CEGB:

"This is one of the biggest problems. According to the old legislation concerning Public Works, the revision of a project's budget, up to a 50% increase of the initially estimated cost, was within the authority of the operating departments. For the approval of further budget increases up to an unlimited amount, the responsibility lied within the Board. This had resulted in poorly prepared studies, as far as the financial dimension of the project was concerned; candidate contractors made thus significantly cheaper offers (than the estimated expenses) in order to get the job. As soon as they did so, they started inventing problems to allow for supplementary compensation... The new legislation tried to remedy this situation by imposing an upper limit of overall 50%, for any revision of a project's budget. Beyond this limit, the legislation provided mechanisms for the dissolution of the contract".

ECS + LPM:

LCMP - ECS:

VOO - ECS:

BP - LPM:

"Anything discussed here today has to do with the organizational chart. Anything, especially performance monitoring. Certainly, neither the organizational structure we had until 1985 was solving the problem nor the one proposed in 1986 by the former General Manager. The latter, after two years of discussions, was finally approved by the Board but dismissed by the Supreme Court..."

"...There are two weaknesses concerning the actual organizational structure; the vagueness of organizational objectives, and the limited managerial capacity at all organizational levels. The upper managerial structure within our company is below the average level... What I say has nothing to do with politics or whatever; it has to do with their personal capacity".

"There is no function such as performance monitoring; neither on the part of service reliability nor on the part of Rail Plan implementation. Whenever I asked for information concerning reports and Plan reviews I got the answer: 'we are preparing it, as soon as it is ready we will bring it to you'. The enterprise operated and operates as a skirmisher".

RIRSP + RKHA:

RPTT + RKHA:

"The only means we have to obtain know-how is the 294/83 contract, concerning the domestic construction of rolling stock. There are also programmes funded by the E.E.C. for engineers and other technicians to be sent abroad and trained in track construction and maintenance".

E.7. LINKS AMONG CONCEPTS EXPRESSED BY THE EMPLOYEES' REP. 3

DNUD + IMP:

DNUD + RSA:

"I would see as strategic decisions related to the railway development plan either those referring to permanent way development projects or to rolling stock acquisition. In my view, the technological ineffectiveness of the enterprise is the main reason which makes such decisions so vital for the future of the network."

CAB - LAIPP:

TUESL + CAB :

RSVAB + NDRP :

DLCPPD + NDRP :

GDPF + CAB :

"We have issues related with funding, procurement, personnel matters. According to the legislation, our Board is totally responsible to decide on economic matters; however, in real life this doesn't happen because of the framework of tight controls imposed by the State which, by 'paying all the bills', has the final say on budgets' approval. I've been on this Board for four years; it never happened for an investment or procurement budget to be sent for approval and to be approved by the government without modifications. There has always been a significant truncation".

PLCOS + DOS :

DLCPPD + NDRP :

VLCS + BMC :

DCIPB - BMC :

IGIS - DCIPB:

CPIPVD - DCIPB:

CPIPV + RIRDS:

RIRDS + DOS :

DOS + OESR :

SRISL + DOS :

RSVAB + NDRP :

"There is the problem of coordination between the different organizational sub-systems, namely employees, track construction and maintenance, rolling stock, and operations, the latter seen as a transport company's operations, and this problem leads to pressures over organizational structures... The main reason of having so many decisions related to personnel is that many of our employees come from different railway firms (public and private ones) that have merged over the years to form the present organization. These companies had different rules governing personnel issues (career development, age of retirement e.t.c) and it's obvious why such issues arise now. The various requirements set by the controlling governmental departments render the problem concerning personnel decisions more acute."

"The majority of these problems could easily have been resolved at lower organizational echelons but there exists an intense concentration of decision making at the top of the hierarchy -I mean the Board and the General Manager- and, to a lesser degree, at head of department and head of division levels. We have an informal repeal of the delegation system which results in the plethora of decisions I have mentioned..."

"The organization tried to design a new structure also concerted with the requisites imposed by the Socialization Law. Unfortunately the proposed model was outside the logic of this institutional framework."

"The Presidential Decree 59/86, on the details of the implementation of the Socialization Law in the Railway, was so vague and so general that led the Board to misinterpret its evaluations about its own competencies in restructuring the organization."

"The way the Board functions is questionable. Though it is the dominating body, it doesn't have access to information sources, in order to compare, to analyse the different elements of the organizational introductory accounts. This results in the raise of the General Manager as dominating figure even above the Board, by possessing the mechanism to shape the accounts. This Law has a disadvantage; according to the old institutional framework, the responsibility for accounts was assigned to the Heads of Departments whereas now it is the General Manager that has this responsibility. But the General Manager is a political figure, subject to dismissal, and has a political attitude... This attitude is also the reason of this silent repeal of the delegation system we were discussing earlier".

RIRDS - LCDS:

LCDS + LPM :

"The concentration of decision making on the top of the hierarchy destroys the foundations of the careers development system which would cater for managers cultivating the spirit of both participative leadership and distribution of responsibility."

E.8. LINKS AMONG CONCEPTS EXPRESSED BY THE HEAD OF PLANNING DEPT.

ROIW + ROI15:

RCP + ROI15:

ROI + ROI15:

"The long-term development plan is the most strategic decision of all. It is an all-including plan; it is concerned with the network's development in physical terms, with rolling stock acquisition, with operations improvements, and with personnel's welfare. To the extent that all those sectors are materialised in parallel, we can argue that we have a satisfactory rate of the Rail Plan's implementation."

IOP + IOSB:

IOSB + VCRS:

IOSB - LOC :

VCRS + NTC :

NTC + LORR:

"We cannot evaluate the conduct of this Supervisory Board since it never achieved a proper functioning. The 1987 Annual Report, we are now in 1989, was never approved, because A.S.K.E. never convened an assembly over this period. In its theoretical conception, this institutional body is o.k. but finally it didn't work. It may be the indifference of its participants, I don't know... Although A.S.K.E.'s inefficiency does not affect the enterprise's daily operations, it does affect the shaping of a railway mission within the transport system. A.S.K.E. could press the government for a study to be undertaken, concerning the coordination of the alternative transport modes. This coordination study would lead to the optimum utilization of every single mode; that is to say each mode should transport people/products for which it is the most economical, from a National Economy viewpoint. There is no need to have competing corridors among transport modes but supplementary... This should be, A.S.K.E.'s one role; the second should be performance monitoring, which, in reality, never occurred over this period".

RFPI + LAIP:

REEC + LAIP:

LOB + LAIP:

"The investments plan has three sources of funding; the public investment programme, borrowing and the Community's contributions".

GPKFL - LOFI :

QSO - GPKFL:

LIJT + QOS :

"There is a decision made by the Board concerning fare increases and the government, for social policy reasons, approves only a part of the proposed increases or ,sometimes, even no increases at all. There were years when, besides inflation, fares remained at the same level.. In the future, we have to be able to define by ourselves the company's pricing policy. We have to persuade the government to look at the problem from a different perspective... The main reason we cannot persuade them now is the quality of services offered. Although the journey times are improving, the rate of improvement is not satisfactory; thus we can only ask, we cannot demand".

LDOB + LOB :

LOB + LDOB:

GPKFL + LDOB:

"O.S.E. has an operational deficit, because of the imposition of social policy and this deficit is covered by borrowing. Thus, the enterprise is caught into a vicious circle; it borrows money to cover its deficits and next year the deficit increases because interests are added, and the following year it will increase much more because of regular installments."

"The State has the obligation, in terms of the Economic Agreement, to cover every year the enterprise's deficits. Due to its weakness to cover the whole amount of these deficits, allowed borrowing which in turn leads to the mounting of the deficit. I will say it again: it's a vicious circle when the enterprise is a problematic one."

NFD + COS:

NIP + COS:

"Recently, we had a reorganization of some divisions -the permanent way sectors constitute now part of the Assistant General Manager's competencies, whereas previously belonged to the regional departments- because there has been a need to improve performance and a need to decentralize some of our functions."

MRSS + LPSP:

HRSR + LPSP:

HRSR - LIJT:

HRSR + PAM :

PAM + ECAS:

EIKHA + ECAS:

LPSP + ECAS:

"We do take into consideration the possibility of know-how acquisition whenever purchases of rolling stock units or spare parts are required. Because we have made procurements of different types of rolling stock and because there is a monopoly state in parts supply we have to buy at very high prices. We cannot afford being under the suppliers' total control. Government's promotion of the industrial economic development defines a framework which, coupled with our wish for know-how acquisition, led to the formation of a different policy. The 294/83 contract implements exactly this policy."

NBTA + HRSR:

LPSP + LIJT:

"We are not a wealthy country and every time we have bid proposals we have to choose among them the ones that came from countries with which Greece had bilateral trade agreements. This led to rolling stock heterogeneity which keeps on causing problems to maintenance and to the overall railway operations. This mixture of rolling stock types creates the big problem of locomotives break-downs which directly affects service reliability; and this displays vividly the weakness of not producing these products in Greece. We don't have spare parts -lack of money,

delays- and, in order not to have two locomotives immobilized, we take off parts from one and put them on to the second until the orders from abroad arrive".

APM + LPM :
 RABP + LPM :
 DNU + WCON:
 LBT + WCON:
 WCON - APM :
 ERTTP - APM :

"The quality of performance monitoring is related on the one hand to the rate of auditing the annual business plan, that is to say if the rate of the progress been made is the same as the one forecasted, and on the other hand to the definition of productivity measures... We cannot easily compare our network with other European ones for we have certain peculiarities. First, the position of our country in the periphery of Europe does not provide for transit traffic. Second, our modernization has been delayed for a number of years, because governments were paying more interest to the development of the road network. Third, we don't have bulk commodities transport; the present design of the network doesn't intercept the major productive areas of the country... The issue of productivity is being presently studied; the productivity level has been quite low compared to other means of transport, for we are obliged to have staff working independently of the traffic transported. Nevertheless, we have to introduce productivity measurements in order to assess if the numbers of our employees are excessive or whatever in terms of the job we are undertaking."

RFC + LPM:
 RPIC + LPT:
 MWUPT + LPT:

"There is a training programme funded partly by the E.E.C. and partly by the enterprise, and also participations in international conferences and committees that contribute to the effort of personnel training. The encouragement on the part of top management of personnel to continuing training is a factor we cannot ignore."

APPENDIX F

SCORES FROM MATRICES

F.1. INTRODUCTION

This appendix contains:

- (a). The matrices produced by the five strategists who participated in this part of the field research (**Figures F1, F5, F8, F13, and F19**).
- (b). The squared matrices of the above five (**Figures F2, F6, F10, F14, and F18**).
- (c) Five structural matrices (**Figures F3, F7, F11, F15, and F19**). (d) Five squared structural matrices (**Figures F4, F8, F12, F16, and F20**).

The notation used concerning the rows and columns of the matrices (strategic-areas) is as follows:

- A:** The 15-Year Railway Development Plan.
- B:** Domestic Rolling Stock Manufacturing (the 294/83 Contract).
- C:** The Annual Budget.
- D:** The Engineering Projects.
- E:** Rolling Stock Acquisition.
- F:** Performance Monitoring.
- G:** The Annual General Assembly of the Supervisory Board (ASKE).
- H:** Organizational Structure.
- I:** Personnel Training.
- J:** The Railway's Proposals to the State's 5-Year Development Plan.
- K:** The Pricing Policy.
- L:** Employment Maintenance / Employees Welfare.
- M:** The Government's Financial Policy (imposed restrictions).
- N:** The Administrative Controls.
- O:** Problems with Suppliers.
- P:** Employees Participation in Decision-Making.
- Q:** Bilateral State's Commercial Agreements.
- R:** The Incompatibility of Policies of the Government's Departments.

S: The Bureaucratic Phenomena.
T: The Decision-Making System.
U: The Management System.
V: Task Design and Job Definition.
W: The Corporate Culture.
X: The Rewards and Compensations System.
Y: The Career and Management Development System.

The appendix also contains:

(e). Tables of identified strong relationships deriving from the strategists' scoring on the matrices (Figures F21, F22, F23, F24, and F25).

(f). A table of direct and direct consequences (Figure F26), according to the Stubbart and Ramaprasad (1988) methodology.

F.2. MATRICES OF STRATEGIST 2 (ASSISTANT GENERAL MANAGER)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A		2		3				2	1			1			-1			-1	-1						1
B	1			1				1	1	1		1	-3		-1		1	-1	-1			1			
C				2	1	1			1		2		3		-1							1	1	1	
D	3	1				2		1	1	3		1	3		-1						1	1			1
E	1	3	2							1			2		-2		1	-1	-1			1			
F	2	2	1	2	1					1						-1		-1	-1	1		-1			
G																-2									
H																-1		-2	-1	-2		-1		-1	
I					1	1	1																		
J	3	3		3	1						1		2		-1	-1		-1	-1						
K			3	2	1					2			3			-1									
L		1		1	1							1			1							-1			
M	-3	-2	1	-1	-1				-1	-2	1	-1			-1		-1	-1	-1			-1			
N	-2	-2	-1	-2	-2										-1			-3	-1			-1	-1		
O			-1	-1	-1									-1			-1					-1	-1		
P	-1	-1	-1	-1		-1	-1	-1	-1									-1	-1	-1		-1	-1	-1	-1
Q					-1																				
R																									
S	-1	-1		-2	-1				-1			-1		3	-1		-1		-2	-1					
T	-1	-1	-1	-1	-1				-1	-1					-1	-2		-1		-1		-1		-1	-1
U	-1	-1	-1	-1	-1	-1			-1					-2	-1	-2		-2	-2			-1	-1		-1
V																									
W						-2	-1	-1							-1			-1	-1	-1		-1	-1	-1	-1
X																							-1		-1
Y																								-1	

Figure F1: Score matrix of Strategist 2 (Assistant General Manager)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	13	6	2	8	5	7		5	7	12		6	4	-2	-2		4	-4	-2	1	5	-1		2	
B	17	15	-1	15	8	3		3	7	10	-2	6	6	-2	3		5	1	2	1	1	4		2	
C		1	13	5	2	3	-1	1	-1	6	3	-1	14	1	-7	-4	-1	-4	-6	2	3	-4	-1		
D	4	13	5	22	4			7		-3	6	1	4	-1	-10	-8	-1	-15	-15			-7		1	
E	2	3	5	16	4	2		5	6		7	3	-1	-1	-7	1	4	-4	-5	2	7	3	2	2	
F	14	14	3	16	3	7	2	10	9	10	3	7	7	-5	-9		4	-6	-4	6	6	2	3	6	
G	2	2	2	2		2	2	2	2									2	2	2		2	2	2	
H	6	6	4	8	5	5	2	2	6	1		2		-2	5	7	2	6	10	5	3	5	2	5	
I	6	6	3	2	1	2		1	1	5		1	5		-3	-1	1	-2	-2	2	2	-1		1	
J	10	11	10	17	2	7	1	13	10	12	2	8	5	-2	-11	1	4	-6	-6	6	8	1	1	8	
K	5	6	6	10	2	8	1	3	3	1	11	-1	21		-12	-2	-2	-5	-5	3	6	1	4	3	
L	2	2	2	-1	-2	2		2	1	3	1	1	2	-1	-5			-4	-3	1	2	-2		1	
M	-10	-15	3	-11	2		1	-8	-3	-3		-5	2	-2	10	4	-1	10	11	2		3	2	-2	
N	-6	-8	-2	-2	4	-3	1	-7	-3	-9	-2	-3	-7	-8	15	3		8	13	3	-5	1		-2	
O	-1	-1	-1	2	3	-1	1		-1	-4	-2		-8	-3	6	1		4	5	1	-1				
P	-3	-2	1	-5		-1	1	-3	-1	-4	-2	-2	-3	-1	7	9		8	9	3	-1	5		3	
Q	-1	-3	-2							-1			-2		2		-1	1	1		-1				
R																									
S	-11	-11	-1	-8	-3	-4		-5	-1	-6		-4	-6	3	5	6	-1	-1	2		-4	1			
T	-4	-5	2	-4		1	3	-1		-5	-3	-2	-7		9	4		9	11	3	-1	4	2	2	
U	3	2	4	4	6		3	-1	2	-4	-2	-1	-5	-5	12	6	1	15	13	5		8	2	3	
V																									
W	-1	-1	1	-1		2	1	1	3	-1				2	2	9		8	6	2	1	8	1	5	
X						2	1	1								1			1	1	1	1	1	1	
Y						2	1	1								1			1	1	1		1	1	

Figure F2: Squared score matrix of Strategist 2

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A		1		1				1	1			1			1				1	1					1
B	1			1				1	1	1		1	1		1		1		1	1		1			
C				1	1	1			1		1		1		1							1	1	1	
D	1	1				1		1	1	1		1	1		1						1	1			1
E	1	1	1							1			1		1		1		1	1		1			
F	1	1	1	1	1					1						1			1	1	1		1		
G																1									
H															1				1	1	1		1		1
I				1	1	1																			
J	1	1		1	1						1		1		1	1			1	1					
K			1	1	1					1			1			1									
L		1		1	1							1			1							1			
M	1	1	1	1	1				1	1	1	1			1		1		1	1			1		
N	1	1	1	1	1										1				1	1		1	1		
O			1	1	1									1			1		1			1	1		
P	1	1	1	1		1	1	1	1										1	1	1		1	1	1
Q					1																				
R																			1	1	1		1	1	1
S																									
T	1	1		1	1				1			1		1	1		1			1	1				
U	1	1	1	1	1	1			1					1	1	1			1	1		1	1		1
V																									
W						1	1	1								1				1	1	1		1	1
X																							1		1
Y																							1		

Figure F3: Structural matrix of Strategist 2

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	4	4	2	6	5	2		2	4	3		3	3	2	5	2	3		4	3	4	4	4		3
B	5	7	3	8	8	2		2	5	3	2	4	3	2	7	3	3		6	5	4	3	4		4
C	4	4	5	5	5	3	1	2	2	5	1	2	3	1	3	3	3		4	4	3	4	4	1	3
D	5	6	4	9	7	2		2	4	3	2	3	3	2	6	4	3		8	7	2	4	6		3
E	5	5	3	8	7	1		2	6	3	3	4	3	2	7	2	4		6	5	2	3	4	1	2
F	8	8	4	8	5	5	2	5	8	4	2	4	5	2	9	4	3		7	8	5	6	4	3	6
G	1	1	1	1		1	1	1	1										1	1	1		1	1	1
H	4	4	3	4	3	3	2	2	4	1		1		2	3	3	1		3	4	4	2	4	2	4
I	3	3	2	1	1	1		1	1	3		1	2		2	1	1		2	2	2	2	1		1
J	7	7	6	8	5	2	1	4	7	6	1	5	4	2	7	2	5		7	6	4	4	4	1	4
K	5	5	3	4	3	3	1	2	4	3	3	2	4		5	1	2		4	4	2	3	3	2	2
L	4	3	3	3	2	1		2	3	4	1	3	3	1	4		4		4	3	1	4	2		1
M	6	7	4	10	9	4	1	4	6	5	2	4	7	2	9	4	4		6	6	4	7	3	2	4
N	5	5	3	6	4	3	1	4	6	4	1	4	4	2	7	2	4		5	5	4	6	3	2	4
O	4	4	2	3	4	3	1	2	3	2	1	2	3	1	5	1	2		2	4	3	5	2	2	2
P	6	6	3	8	6	5	1	4	7	4	1	4	3	2	7	6	2		6	7	6	5	7	2	7
Q	1	1	1							1			1		1		1		1	1		1			
R																									
S	6	7	5	8	7	3		3	5	4		3	4	2	8	2	3		7	5	2	7	4		4
T	7	7	4	9	6	6	2	5	7	3	2	4	5	3	8	3	4		7	8	4	7	5	3	5
U	8	8	6	10	7	5	2	5	7	5	1	4	4	2	8	3	4		8	8	6	7	7	3	5
V																									
W	4	4	4	4	3	2	1	1	3	2				1	2	5			5	4	4	1	7	1	5
X						1	1	1								1				1	1	1	1	1	1
Y						1	1	1								1				1	1	1		1	1

Figure F4: Squared structural matrix of Strategist 2

F.3. MATRICES OF STRATEGIST 5 (EMPLOYEES' REPRESENTATIVE 1)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A		3		3					1	1		2													
B	3			1	1				1	1		2			-1										
C		1		2	1				1	1	1	2	1		-1									1	
D	3		3						1	1		2	1		-1										
E	3		3						1	1		2	1		-1										
F		1		-1	-1			2																	
G			-2			3																			
H	1	1		-1	-1				-2	1					1			-1	1	1					
I										1											1		1	1	
J				1	2			2	1			1	1		-1			-2							
K			-2										1					-2							
L	1	2	2	1				2	1			-1						2	1	-2	-1	-2	-1		
M	-3	-3	-3	-3	-3		-3		-2	-2	1	-1			-1			2		-3					
N	-3	-3		-3	-3		-3	-1	-2	-2					2			2	1	-2	-3	-1		-1	
O	-3	-2		-2	-2														1	-1		1			
P	1	1	1				1														1		1	1	
Q	-2				-2				1						2			2	1	-2					
R	-3	-2	-3				-3		-1								3		1	-3	-3				
S	-2	-2		-1	-2			-2	-3						1					-2	-1	-2			
T	-2	-2		-2	-2			-2	-1						1				1						
U	-2	-2	1	-2	-2			-2	-1						1				1	2				1	
V	-1	1			-1				1										1	2					
W	1	1		1				-2	1											2					
X	1	1		1					1											2			1		
Y	-2	2		-2	-2				-1											2					

Figure F5: Score matrix of Strategist 5 (Employees representative 1)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A		-24	-14	-12	-19	-8		-9		-3	-4		2		3		6	10	4	-13	-8	-3	-2	4	1
B	-18		-21		-5	-18		-9		3	1		10	4	2		6	16	3	-12	-8	-4	-2	4	1
C	-28	-1		-28	-13	4		-9	6	-2	-13	-3	-18	-10	10	-2	6	-8	7	-16	-10	-4	-1	1	1
D	-12	-18	5		-1	-17		-9		5	1		12	5	1		6	18	3	-12	-8	-5	-2	3	
E	-12	-21	6	-3		-18		-9		5	3		14	6			6	20	3	-12	-8	-4	-2	4	1
F	5	17	-16	-5	8			6	-10	-5	-3	-12	-5		4	2		-14	-2	2	2			-3	
G	4	4		4	4			4	-2	-2	-2	-4	-2		2			-4						-2	
H	2	3	6	7	-1		-2	6		-3	-3	-3			4			2	3	-5	1	-2		-2	-2
I	-18	15	-26	-9	15			6	-7	-8	-2	-21	-10		7			-20	3	-6			1	-2	
J	-5		-16	-18	-4		-9		-8	-2	-2	1	-1		3	2	6	2		-8	-5	-2	-1	2	1
K	-5	-3	-9	-5	-5		-9	4	-6	-8	-5	-5	-6		7		6	-2	2	-9	-6			-2	
L		-14	-4	-8	-16		-9	2	-6	-1	-1	15	4		-2	2	6	14	-7	-1	-5	-1		2	1
M	-13	27	-30	-8	14		-6	10	-12	-22	-5	-31	-21		15		6	-32	1	-9	-7	-3	-1	-5	-2
N	-19	20	-31	-15	8		-6	6	-14	-27	-2	-23	-19		11	1	6	-28	-4	-1	-7	-4	-2	-5	-2
O	-23	8	-34	-19	1		-6	-2	-11	-14	-2	-21	-14		11		6	-20	2	-10	-7	-2			
P	1	-5	5	2	-8			-6	4	7	1	5	3		-1			6	5	-6			1	2	
Q	-16	13	-28	-10	5			4	-8	-12	-2	-25	-14		11		6	-20	3	-6	-8	-1	-1	-1	1
R	-8	26	-30	-2	19		6	10	-4	-26	2	-24	-24		12			-30	-2	4		1	1	-7	-1
S	-2	15	-15		17			2	-3	-15		-14	-11		3	-2		-16	-3	5	-1		1	-4	-3
T	-23	1	-20	-10	7			-4	-6	-13		-19	-11		7	-2		-16	2	-3	-2		1	-1	-1
U	-24		-18	-5	13			2		-11	1	-13	-8		2	-2		-10	2	-5	-2		2		-1
V	-1	2	-5	-2	1			2	-2	-1		-1	-1		-1			-2	-2	-2	-1	-1		1	1
W	-1	-10	12	7	-1			2	3			5	2		-3	-2		8		-6	-4	-3		1	1
X	2	-7	8	6	-3					3		7	4		-3			8		-6	-2	-3		1	1
Y	-3	9	-8	2	9			8	2	-5		-4	-2		-2			-4	-2			-1		-1	-1

Figure F6: Squared score matrix of Strategist 5

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A		1	1	1	1				1	1		1	1					1							
B	1		1	1	1				1	1		1	1		1			1							
C	1	1		1	1			1	1	1	1	1	1		1			1							1
D	1		1							1		1	1		1			1							
E	1		1	1					1	1		1	1		1			1							
F	1	1	1	1	1			1																	
G			1																						
H	1	1	1	1	1				1	1		1	1			1			1	1	1				
I	1	1	1	1	1					1												1		1	1
J	1	1	1	1	1			1	1			1	1		1			1							
K			1										1					1							
L	1	1	1	1				1	1				1					1	1	1	1	1	1		
M	1	1	1	1	1		1		1	1	1	1			1			1		1					
N	1	1		1	1		1	1	1	1	1	1			1			1	1	1	1	1		1	
O	1	1		1	1					1								1	1	1		1			
P	1	1	1				1														1		1	1	
Q	1	1	1	1	1				1	1	1	1	1		1			1	1	1					
R	1	1	1	1	1		1		1	1	1	1	1		1		1		1	1	1				
S	1	1		1	1			1	1	1		1			1					1	1	1			
T	1	1		1	1			1	1			1			1				1						
U	1	1	1	1	1			1	1	1		1			1				1	1				1	
V	1	1			1				1										1	1					
W	1	1		1				1	1	1									1	1					
X	1	1		1					1	1									1	1			1		
Y	1	1		1	1				1	1											1				

Figure F7: Structural matrix of Strategist 5

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	9	6	8	8	6		2	3	7	7	3	7	7		7		1	7	2	3	2	2	1	2	1
B	9	8	8	9	7		2	3	7	8	3	7	7		6		1	8	3	4	2	3	1	2	1
C	11	9	11	11	8		2	2	9	10	2	8	9		6	1	1	9	5	6	3	3	2	1	1
D	6	7	5	7	6		2	3	6	5	3	5	5		4		1	6	3	4	2	2	1	1	
E	8	8	7	8	7		2	3	6	7	3	6	6		5		1	7	3	4	2	3	1	2	1
F	5	3	5	5	4			1	5	6	1	6	6		4	1		5	1	1	1			1	
G	1	1		1	1			1	1	1	1	1	1		1			1						1	
H	12	10	10	11	9		2	6	10	9	2	10	7		9			8	3	4	3	3	2	4	1
I	8	6	5	7	6			2	8	7	1	6	6		5			6	2	3			1	1	
J	10	8	9	10	8		2	2	8	10	3	8	8		6	1	1	8	4	5	3	3	1	2	1
K	3	3	2	3	3		2	1	3	3	3	3	2		3		1	2	1	2	1			1	
L	12	11	8	11	11		2	5	11	11	3	10	6		8	1	1	5	6	7	3	2		3	1
M	10	8	10	10	8		1	4	8	8	2	8	9		7		1	9	4	3	2	3	1	2	1
N	14	12	12	13	11		1	5	12	11	1	10	9		8	1	1	8	8	8	4	4	2	2	1
O	8	6	6	7	7		1	3	8	6	1	8	6		7		1	5	3	3	2	1			
P	5	5	4	6	4			3	6	6	1	4	3		3			3	3	3			1	2	
Q	12	10	10	12	10		2	5	10	10	3	10	9		9		1	10	4	5	3	4	1	2	1
R	13	11	12	13	11		1	6	11	11	3	11	9		10			11	5	6	2	4	1	3	1
S	11	9	9	10	9			4	9	8		8	7		6	1		7	6	5	2	3	1	2	1
T	8	6	7	8	6			2	6	8		6	6		4	1		6	3	4	3	4	1	1	1
U	12	10	8	12	9			5	10	10	1	9	8		7	1		8	5	5	3	4	2	2	1
V	5	4	4	6	5			2	5	5		5	3		4			3	1	1	1	2		1	1
W	7	6	6	7	7			3	6	6		7	5		5	1		4	2	2	2	2		1	1
X	7	6	5	7	6			4	6	6		6	4		5			4	2	2	1	2		1	1
Y	6	4	6	6	5			2	5	5		6	5		5			5	1			1		1	1

Figure F8: Squared structural matrix of Strategist 5

F.4. MATRICES OF STRATEGIST 6 (EMPLOYEES' REPRESENTATIVE 2)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A		2		3	1			1	3	2	1	1							-1	1					
B	2			3	3				3	1	1											1	1	1	
C									1		2													1	1
D	2	3			2					2	1	1										1		1	
E	1			2					1	1					1							1	1		
F	1	1		2	3			2	2		1								1	1	1		2	2	3
G	2	2	1	2		1		3		1	2					3				1			2		
H	-1					-1	-1					1		-2	-1			-1	-1	-2				-1	-1
I	2	2								2						1			1			3	3	1	2
J	3			3	3			2	2		2	2				1			1	1		1	1		
K			3																						
L			1					1															1	1	1
M	-1	-2	-3	-2	-1					-1	-3	-3								-1	-1	-1		-2	
N				-1	-2			-1		-1	-3	-3			-1				-3	-2	-3	-2	-3	-1	-1
O	-1	-1		-1	-1												-1								
P	1	1	1	1	1	1	3	2	2	1	3	3						2		3	1	3	3		3
Q	1	2		3	3					1				-1	-1										
R	-2		-2	-3	-1					-2	-3		-3	-1	-3						-1				
S		-1		-1	-2		-1	-3						-3	-1				-3	-2	-2	-2			-1
T	-1			-1	-2	-1	-1			-1					-1	-1					-2	-1	-1		
U			1		2	1		1				1		-1				-1	-1			1	1	1	1
V									3			1			1										
W							1					1			3										1
X			-1																		1	-1	-1		
Y																						-2	-2		

Figure F9: Score matrix of Strategist 6 (Employees representative 2)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	21	16	4	14	18	-2	-1	8	11	14	9	8		1	-1	4	1		4	4		18	16	10	9
B	18	19	2	15	11		1	4	14	19	7	9				8	3		2	3	2	15	12	6	7
C	2	2	5							2						1			1		1			1	2
D	14	4	3	25	17			7	24	9	9	7				3	2			4	3	6	7	4	1
E	10	12		9	11		1	3	8	8	6	7		-1	-1	6			1	2	1	6	4	3	3
F	10	11	2	10	6	-2	-2	-1	9	13	4	8		-8	-1	4	3		-2	-5	-6	2		8	8
G	11	14	9	19	19	-1	7	12	23	12	20	20		-6	-1	3		6	-3	10	-3	13	13	10	18
H	-3	-5	-4	-4	-1	-3	-1	-4	-7	-1	-1			5	3	-1		-2	8	3	9	-1	-2	-1	-4
I	11	4		18	13	1	5	5	27	7	11	15		-3		13		2		4	2			2	5
J	11	19	10	14	8	-1		5	17	19	9	14		-8	-1	2	3	2	-4		-7	13	12	10	12
K									3		6													3	3
L	-1		-1			-1			1		2	2		-2		2			-1	-1	-1	-3	-3	2	3
M	-11	-8	-11	-13	-14		1	-7	-18	-8	-13	-7		1	1	-1	-1		1	-1	-1	-4	-5	-11	-7
N	-3	1	-14	-1			3	1	-10	-2	-3	-12		14	2	-6	-1		3	12	10	4	2	-8	-7
O	-6	-7		-11	-9			-1	-7	-6	-4	-2		1	1		-1		1	-1		-3	-2	-2	
P	10	16	12	10	6	-1	-2	18	21	6	8	13	-6	-7	-3	13	1			3	-10	2	12	13	17
Q	14	12	3	17	16			2	12	14	9	7				1		4		2	3	3	10	8	6
R	-13	-10	-4	-10	-14	-4	-9	-12	-19	-10	-10	-7		1	1	-2	-1	-6	4	-7	1	-11	-10	1	-11
S	-3	-6	-4	-4	2	2	1	-4	-13	-1	2	-4		8	6	-5	-2	-2	14	7	20	2	4	-4	-7
T	-10	-8	-4	-14	-13	-4	-4	-12	-14	-8	-10	-11		2		-8	-1	-2	1	-5	-3	-9	-12	-5	-9
U	3	2		9	9		2	7	8	4	6	6		1	2	5	2		3	5	7	4	8	6	9
V	7	7	2	1	1	1	3	3	2	7	3	3				3		2	3	3	1	12	13	4	10
W	5	5	5	5	3	4	9	10	6	4	11	9				3		6		10	3	7	10	1	10
X			1		2	1	-1	1	-4		-2	-1		-1		-4			-1	-1		1	1		-1
Y							-2		-6			-4				-8									-2

Figure F10: Squared score matrix of Strategist 6

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A		1		1	1			1	1	1	1	1							1	1					
B	1			1	1				1	1	1											1	1	1	
C									1		1													1	1
D	1	1			1					1	1	1										1		1	
E	1			1					1	1							1					1	1		
F	1	1		1	1			1	1		1								1	1	1		1	1	1
G	1	1	1	1		1		1		1	1					1							1		
H	1					1	1					1		1		1			1	1	1			1	1
I	1	1								1						1			1			1	1	1	1
J	1			1	1			1	1		1	1				1			1	1	1	1	1		
K			1																						
L			1					1															1	1	1
M	1	1	1	1	1					1	1	1								1	1	1		1	
N				1	1			1		1	1	1			1				1	1	1	1	1	1	1
O	1	1		1	1												1								
P	1	1	1	1	1	1	1	1	1	1	1	1							1		1	1	1	1	1
Q	1	1		1	1						1				1	1									
R	1		1	1	1					1	1		1	1		1						1			
S		1		1	1		1	1						1		1				1	1	1	1		1
T	1			1	1	1	1			1					1	1						1	1	1	
U			1		1	1		1				1		1					1	1		1	1	1	1
V									1			1				1									
W							1					1				1									1
X			1																			1	1	1	
Y																							1	1	

Figure F11: Structural matrix of Strategist 6

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	7	3	2	5	5	2	3	3	3	5	3	3		2	1	5	1		3	3	4	7	7	5	4
B	4	3	2	3	3		1	2	4	4	3	5				4	1		3	2	2	5	4	2	2
C	1	1	2							1						1			1		1	3	3	1	1
D	3	1	3	4	3			3	5	3	3	3				2	1		2	2	2	4	5	2	1
E	4	4		3	4		1	2	3	3	4	5		1	1	4			3	2	1	3	2	2	2
F	6	4	3	5	6	3	4	3	3	6	3	5		3	1	5	1		4	4	4	9	8	5	5
G	7	4	2	6	7	3	4	4	6	5	7	6		1	1	4		1	4	5	5	5	5	5	5
H	4	5	5	7	7	4	3	8	3	5	5	4		2	2	3		1	4	7	6	7	10	4	6
I	3	3	2	5	5	1	3	4	5	3	4	5		1		4		1	2	4	4	6	6	1	3
J	6	5	4	5	6	4	5	5	4	6	3	7		3	1	6	1	1	4	5	4	7	7	5	7
K									1		1													1	1
L	1		1			1	2		1		1	2		1		2			1	1	2	2	2	2	3
M	5	2	4	5	6	2	1	4	6	5	5	5		1	1	3	1		3	3	3	7	7	5	3
N	6	3	4	5	6	3	4	4	3	3	2	6		3	1	6	2		3	4	5	8	8	4	5
O	4	3		4	4			1	3	4	4	2		1	1		1		1	1		3	2	2	
P	10	5	5	8	8	4	3	6	7	8	8	7	1	3	1	8	1		6	6	5	8	10	8	7
Q	4	3	1	5	5			2	3	5	4	3			1		2		2	2	1	4	3	3	1
R	5	4	4	6	7	2	1	5	5	6	7	7		1	1	1	1	1	4	6	4	7	5	5	4
S	7	3	3	6	6	5	4	4	4	7	5	7		2	2	5	1	1	3	5	4	8	8	5	5
T	7	6	3	7	7	3	2	6	6	5	6	7		1		4	2	1	4	6	3	5	6	3	4
U	4	2	2	5	4	2	4	4	4	3	3	4		2	2	5	1		3	4	6	6	8	5	7
V	2	2	2	1	1	1	1	2	1	2	1	1				1		1	1	1	1	2	3	2	3
W	2	2	3	2	1	2	1	3	1	2	2	1				1		1		2	1	2	4	1	2
X			1		1	1	1	1	2		1	3		1		2			1	1		1	1	2	3
Y							1		1			2				2									1

Figure F12: Squared structural matrix of Strategist 6

F.5. MATRICES OF STRATEGIST 7 (EMPLOYEES' REPRESENTATIVE 3)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A		3	2	1	2		1	-1	2			1		2	2	1	-1	-3	1		1				
B	3		2	1	3			-1	1		1	1		1	1		1	-2	1		1		1		
C	2	2		2	1	1	1		1		2		1	1	2			-1	1	1		1	1	1	1
D	3	-1	2		1		1		1			1		1	-1		1	-1	1			1	1		1
E	2	3	2	2			1		1		1	1		1	2		2	-1	1				1	1	
F			2	1									1	-1	1	3	1	-2	-2	2	1	1	1	1	1
G	-1		1			1						1				2	1			1	1	1	1		
H		-1	1	1	1				1					-2	-1	1	1	-1	-2	1	2		2	1	2
I	1	1	1		1			1						-1	-1		1	-1	-2	1	1	1		1	1
J			1																						
K		1	1	1	1		1						1	-1		1	1	-2	-1	-2	-2				
L	1	1							-1					-1		1		-1	-1	-1	-1		1		
M	-1		1								-1			-1	-2	-1	-1								
N	-3	-2	1	1	1	-1					-1		-1		2		-1	-2	3	-3	-2		-1	-1	-1
O	-2	-3	-2	2	1	-1						-2	3		-3	-2	2	2	-2	-1					
P	1	1		1		1	1	1	1		1			-1	-1		-1	-2	-1	1	1	1	3	1	1
Q	1	2	2	2	1	-1						-1	-3	-1				-1	-2	1	2				
R	-1	-1	-1	-1	-1	-2					-1	-1		1	-1	-2		2	-1	-1	-1	-2			
S	-2	-2	-2	-1	-1	-2	-1	-2	-1		-1	-1	2	2	-1	-2	1		-2	-1	2	-1	-1	-1	-1
T	1	2	1	1		-1	-1	-1			-1			1	1		1	1	2		-2	-1	-2	-1	-1
U	1	1	1	1		-1	-1	-1	1					1	1	1	1	1	2			-1	-1	-1	-1
V	1		1		1									1		1	1		2		1		1	1	1
W			1		1	1	-1		1			-2	-1		1			-1	1	1	2		1	1	
X	1	1	1		1				1					-1	1	2		-1	-2	1	1	1	1		1
Y	1	1	1						1					-2	1	1		-1	-2	1			1	1	

Figure F13: Score matrix of Strategist 7 (Employees representative 3)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	12	2	10	14	14	4	4	-3	7		10	7	-1	18	13	-1	8	-12	12	-6	-2	11	13	2	
B	12	23	18	18	13	1	7	-5	11		7	7	-2	13	17	4	5	-17	7	-4		9	6	3	
C	11	7	24	15	21	-2	4	-6	11			8	-4	10	10	7	5	-18	5	-5		10	8	3	4
D	7	23	17	9	9	3	4	-3	8		3	4			13	12	2	-17	-2	4	6	9	6	5	3
E	17	9	21	19	26	-1	5	-6	11		6	8	-6	8	10	3	1	-20	3	-3	6	12	10	2	5
F	11	8	3	9	3	10	4	4	12		9	1	2	-5	-6	6	8	-7	-4	16	9	4	17	8	9
G	9	7	6	8	2	1	-1	1	2		3	-1	-1	-6		6	3	-4	-2	6	3	4	7	4	4
H	16	17	8	2	-2	9	1	4	12		7	1	3	-14	-4	14	15	-5	-15	22	12	3	10	9	8
I	13	14	10	5	5	6	3		11		7	3	6	-7	2	13	15	-11	-5	15	12	-3	10	6	6
J	2	2		2	1	1	1		1		2		1	1	2			-1	1	1		1	1	1	1
K	5	-1	1		2	13	9	6	4		10	4	4	-7	-10	2	6	-11	-14	11	14	8	20	9	9
L	1	-1	-2	-2	2	9	4	2	5		6	2	1	-2	-4	3	1	-7	-7	7	9	3	11	5	5
M	7	3	-2	-8	-6	4	-2		-2		2	-1	6	-2		4	6	5	-3	8	2		-1	1	1
N	-6	-20	-20	-5	-11	2	2	4	-13		4	-3	-3	12	-6	-19	-8	19	-2	-11	-5	11	7	1	1
O	-14	-21	-6	-11	-8	-11	-3	1	-12		-12	-2	-8	7	6	-8	-7	14	12	-24	-19	1	-16	-7	-6
P	11	7	15	-1	8	11	-1	-1	12		4	4	3	-6		22	18	-12	-12	16	12	9	12	8	10
Q	28	16	6	3	5	9	5	-2	13		13	6	9	7	1	7	19	-5	3	16	10	-3	9	4	5
R	7	-1	-5		4	-3	4	-5			3	4		23	11	-14	-7	4	13	-12	-7	1	-1	-4	-4
S	1	-9	-7	4	12	-2	8	-3	3		6	5	-4	35	17	-18	-11	-2	39	-21	-10	-3	-3	-2	-4
T	8	2	2	8	10	-9	4	-5	-3			3	-4	16	7	-20	-14	-3	15	-14	-7		-6	-6	-6
U	9	7	5	11	10	-9	3	-4				2	-5	13	6	-16	-12	-4	13	-13	-7	2	-6	-5	-5
V	10	16	15	12	9	-4		-5	7		1	2	-5	1	13	4	-4	-9		-1	2	8	3	1	
W	16	12	5	6	3	2	2	2	7		7		4		7	10	11	-6	-2	11	6		8	8	7
X	10	9	4	8	6	8	4	3	12		9	3	1	1		5	9	-9		12	9	1	13	9	7
Y	8	6	-1	3	5	9	3	3	9		8	2	2		-4	4	7	-5	-7	14	10	2	10	7	8

Figure F14: Squared score matrix of Strategist 7

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A		1	1	1	1		1	1	1			1		1	1	1	1	1	1		1				
B	1		1	1	1			1	1		1	1		1	1		1	1	1		1		1		
C	1	1		1	1	1	1		1		1		1	1	1			1	1	1		1	1	1	1
D	1	1	1		1		1		1			1		1	1		1	1	1			1	1		1
E	1	1	1	1			1		1		1	1		1	1		1	1	1				1	1	
F			1	1									1	1	1	1	1	1	1	1	1	1	1	1	1
G	1		1			1						1				1	1			1	1	1	1		
H		1	1	1	1				1					1	1	1	1	1	1	1	1		1	1	1
I	1	1	1		1			1						1	1		1	1	1	1	1	1		1	1
J			1																						
K		1	1	1	1		1						1	1		1	1	1	1	1	1				
L	1	1							1					1		1		1	1	1	1		1		
M	1		1								1			1	1	1	1								
N	1	1	1	1	1	1					1		1		1		1	1	1	1	1		1		1
O	1	1	1	1	1	1						1	1		1	1	1	1	1	1	1				
P	1	1		1		1	1	1	1		1			1	1		1	1	1	1	1	1	1	1	1
Q	1	1	1	1	1	1						1	1	1				1	1	1	1				
R	1	1	1	1	1	1					1	1		1	1	1			1	1	1	1	1		
S	1	1	1	1	1	1	1	1	1		1		1	1	1	1	1	1		1	1	1	1	1	1
T	1	1	1	1		1	1	1			1			1	1		1	1	1		1	1	1	1	1
U	1	1	1	1		1	1	1	1					1	1	1	1	1	1			1	1	1	1
V	1		1		1									1		1	1		1		1		1	1	1
W			1		1	1	1		1			1	1		1				1	1	1	1		1	1
X	1	1	1		1				1					1	1	1		1	1	1	1	1	1		1
Y	1	1	1						1					1	1	1		1	1	1			1	1	

Figure F15: Structural matrix of Strategist 7

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	14	13	12	11	10	9	6	5	9		7	4	6	12	12	7	12	13	13	11	11	8	12	8	8
B	11	14	13	11	12	8	8	4	9		5	3	8	13	11	9	11	13	14	11	11	7	9	8	8
C	14	12	18	10	12	7	7	5	8		7	5	7	15	13	12	15	13	15	11	14	9	12	9	9
D	13	11	13	9	11	8	5	4	8		6	4	7	12	10	9	10	11	13	11	12	6	10	8	6
E	12	12	13	9	13	8	6	4	8		5	4	8	12	10	9	10	12	13	12	13	8	9	5	7
F	14	12	13	9	10	10	7	4	8		7	1	7	13	12	9	10	11	13	10	10	9	11	9	10
G	7	7	7	7	5	6	6	4	6		3	1	4	10	7	6	6	8	10	6	8	6	7	7	7
H	15	14	14	11	11	10	8	6	10		8	3	7	14	14	7	11	14	15	11	11	10	12	10	10
I	13	13	14	12	11	8	6	5	9		7	3	6	13	13	9	11	13	14	9	11	6	12	9	8
J	1	1		1	1	1	1		1		1		1	1	1			1	1	1		1	1	1	1
K	13	10	11	10	7	9	7	5	7		9	4	5	10	12	5	11	10	10	7	8	8	11	7	7
L	8	8	9	8	7	7	6	7	6		6	2	4	8	9	5	9	8	9	6	9	7	7	7	7
M	5	7	5	7	6	5	4	2	3		3	1	5	6	5	3	5	7	7	6	6	2	3	3	3
N	13	13	16	12	11	8	9	5	10		7	4	8	16	14	11	12	14	15	10	11	9	11	8	8
O	12	11	12	12	8	8	8	6	8		9	4	6	12	14	6	12	12	12	7	9	8	11	8	8
P	14	14	19	12	14	9	7	6	9		5	4	8	16	14	13	15	15	17	13	16	10	13	10	11
Q	11	10	12	11	8	7	7	5	7		8	4	6	11	12	7	12	11	11	6	8	7	10	7	7
R	12	11	14	12	10	8	10	6	9		7	4	7	16	12	9	13	13	14	8	11	8	10	9	9
S	17	16	20	14	14	10	9	6	11		8	5	8	19	17	13	17	17	20	14	16	11	15	12	12
T	13	13	17	12	14	9	7	4	10		5	4	9	15	13	13	13	14	16	13	14	9	13	9	10
U	14	13	16	11	14	9	6	5	10		6	4	8	15	14	11	13	14	16	14	15	10	13	10	11
V	9	10	9	8	7	7	7	4	9		5	2	5	10	10	6	6	10	10	8	7	6	8	8	7
W	13	10	12	8	6	7	6	5	7		7	2	4	12	12	8	11	11	11	9	9	9	12	11	10
X	13	12	13	11	10	9	8	7	9		8	3	6	13	12	8	12	12	14	9	11	8	11	11	9
Y	10	10	10	9	10	8	6	6	7		7	2	6	10	10	6	9	10	11	9	11	8	8	7	8

Figure F16: Squared structural matrix of Strategist 7

F.6. MATRICES OF STRATEGIST 8 (HEAD OF THE PLANNING DEPARTMENT)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A			3	3	1			1	1	2	1	1													
B	1		2																						
C	3	3		3	3				1	3	2														
D	3		3																						
E	1		3							1	1														
F	2	1																					3	3	3
G	3	1	1	3	1	3		1		3	3									3	3				
H						2									1	2			3	3	3	3	2	1	2
I			1									2										3			1
J	1	1	3	3	2				1		2														
K			3	1																					
L	1		3						1													1		1	1
M	-3	-3	3	-3	-3				-3	-3	1	-2												-1	
N	-1	-1		-1	-1				-1	-1	-1	-1						2	3	-3	-3				
O	-1	-3		-1	-3												-3								
P							3	3													3	3		3	
Q			2							2				1											
R	-2		-2	-2					-3	-3		-3	-3				-3			-3	-3				
S	-1	-1	-1	-1	-1	-1		-2	-1	-1		-1	-3	3					-3	-3	-2		-1	-1	
T								3			2	1	3	-3	3	3	-3	-3			3	2	1	1	2
U	2		3	3		3		3	2	2	2	1	2	-1	3	3	1	3	3		3	3	3	3	3
V							2		3			1			2						1		3	3	3
W						2														2	2				
X			1																		2	3	3		3
Y						3															3	3	3	3	

Figure F17: Score matrix of Strategist 8 (Head of the Planning Dept.)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	22	11	25	16	13	2			6	10	11	2			1	2			3	3	3	7	2	2	4
B	6	6	3	9	7			1	3	8	5	1													
C	18	3	49	20	9			3	6	9	12	5										3			1
D	9	9	9	18	12			3	6	15	9	3													
E	10	10	9	16	12			1	5	11	9	1													
F	1		11	6	2	15		2	2	4	2	2								6	21	18	18	9	9
G	29	9	50	33	12	11		21	13	16	24	9		15	-11	20	18	-6	3	12	12	18	23	22	26
H	6	-4	7	5	-6	16	12	18	12	3	12	6		6	-3	24	15	-6		10	21	18	42	30	30
I	5	3	6	3	3	3	6		12	3	2	3				6					6	5	12	14	11
J	21	9	27	14	10			1	4	13	9	3									3				1
K	12	9	3	9	9				3	9	6														
L	9	9	5	12	10	3	2	1	7	11	7	4				2					6	9	9	6	7
M	-11	6	-49	-8				-3	-5		-6	-9									-2	-14	-3	-2	-8
N	-20	-4	-37	-23	-6	-12		-25	-12	-18	-22	-12	-6	-30	21	-18	-24	6		-24	-24	-25	-12	-16	-20
O	-9		-27	-3	-1			-1	-1	-5	-10	-1		-3											
P	15	3	12	18	3	30		21	6	15	21	6		15	-9	24	18	-6	9	33	33	24	18	15	21
Q	5	5	6	7	5				1	5	3	-1						2	3	-3	-3				
R	-9	3	-54	-21	-2	-9		-20	-1	-4	-30	1		-18	12	-18	-18		-9			-15	-12	-9	-15
S	-18	-11	-28	-18	-12	-16	-4	-19	-13	-9	-15	-8		-15	10	-26	-27		-15	-6	-13	-31	-31	-27	-33
T	16	9	34	20	9	26	13	24	13	15	18	5	9	27	-9	19	27	9	27	38	39	34	39	28	28
U	21	12	36	17	13	18	15	14	12	5	19	7	-3		3	21	9	-5	6	6	33	34	54	31	39
V	9	2	14	9	2	24	6	11	3	8	8	7		2	-1	3	3	1	3	21	33	31	27	13	16
W	8	2	6	6		6		12	4	4	8	4		10	-8	12	12	-4		6	6	10	14	14	16
X	7	3	6	9	3	21	6	6	14	7	6	5		4	-2	12	6	2	6	12	18	15	24	24	15
Y	12	3	12	9		15	6	9	15	6	6	6		6	-3	15	9	3	9	15	15	18	36	27	36

Figure F18: Squared score matrix of Strategist 8

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A			1	1	1			1	1	1	1	1													
B	1		1																						
C	1	1		1	1				1	1	1														
D	1		1																						
E	1		1							1	1														
F	1	1																					1	1	1
G	1	1	1	1	1	1		1		1	1									1	1				
H						1									1	1			1	1	1	1	1	1	1
I			1									1										1			1
J	1	1	1	1	1				1		1														
K			1	1																					
L	1		1						1													1		1	1
M	1	1	1	1	1				1	1	1	1												1	
N	1	1		1	1				1	1	1	1						1	1	1	1				
O	1	1		1	1												1								
P							1	1												1	1		1		
Q			1								1			1											
R	1		1	1						1	1		1	1			1			1	1				
S	1	1	1	1	1	1		1	1	1		1		1	1					1	1	1		1	1
T								1			1	1		1	1	1	1	1	1		1	1	1	1	1
U	1		1	1		1		1	1	1	1	1		1	1	1	1	1	1			1	1	1	1
V							1		1			1				1					1		1	1	1
W						1														1	1				
X			1																		1	1	1		1
Y						1																1	1	1	1

Figure F19: Structural matrix of Strategist 8

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	5	2	6	3	2	1			3	2	3	1			1	1			1	1	1	3	1	2	3
B	1	1	1	2	2			1	2	2	2	1													
C	4	1	7	3	2			1	2	2	3	2										1			1
D	1	1	1	2	2			1	2	2	2	1													
E	2	2	3	4	3			1	3	2	3	1													
F	1		3	1	1	2		1	1	1	1	1								1	3	2	2	1	1
G	7	3	7	5	3	2		3	4	4	6	3		2	3	3	2	2	3	2	2	3	4	4	4
H	4	3	3	3	2	4	2	4	3	2	2	4		3	3	3	3	2	2	4	7	5	7	6	6
I	2	1	1	1	1	1	1		3	1	1	1				1					2	2	2	3	2
J	4	1	6	3	2			1	2	3	3	2										1			1
K	2	1	1	1	1				1	1	1														
L	1	1	3	2	2	1	1	1	3	2	2	3				1					3	3	3	2	3
M	6	2	9	4	3			1	4	3	4	2									1	3	1	1	3
N	8	2	11	6	3	2		4	5	5	6	5	1	4	3	2	3	2	2	3	3	5	2	4	5
O	3		5	1	1			1	1	2	3	1		1											
P	2	1	2	2	1	4		3	1	2	3	2		2	3	3	2	2	3	4	4	3	3	3	3
Q	2	2	1	3	2				2	2	2	1						1	1	1	1				
R	6	4	7	7	5	1		3	6	5	8	5		3	2	2	2	3	3	2	2	2	2	3	2
S	10	5	9	6	5	3	1	3	7	5	7	6		2	3	4	3	3	4	3	6	7	7	7	8
T	6	3	7	6	3	5	2	3	5	4	4	4	1	4	3	3	3	2	3	7	9	6	6	6	6
U	9	6	10	8	6	4	2	4	7	5	7	6	1	4	3	3	3	2	3	6	10	7	7	7	8
V	3	1	5	2	1	4	1	3	2	2	2	2		1	1	1	1	1	1	4	5	5	4	3	4
W	2	1	1	1		1		2	1	1	2	2		2	2	2	2	2	2	1	1	2	3	3	3
X	2	1	1	2	1	3	1	1	3	2	2	2		1	1	2	1	1	1	2	3	2	3	3	2
Y	2	1	2	1		2	1	1	2	1	1	2		1	1	2	1	1	1	2	3	2	4	3	4

Figure F20: Squared structural matrix of Strategist 8

F.7. IDENTIFIED STRONG RELATIONSHIPS

potential entries	identified relationships		strong relationships		Strategist 2 (Assistant General Manager)
	no.	%	no.	%	Direct Impacts
90	36	40	15	42	<p>Strategic Decisions on Strategic Decisions</p> <p>a. The Rail Plan affects positively Modernization Projects (+3), 294 Contract (+2) and Organisational Structure (+2)</p> <p>b. Annual Budget impacts positively on Modernization Projects (+2).</p> <p>c. Modernization Projects influence positively the Rail Plan, and Proposals for Stae's Plan (+3) and Performance Monitoring (+2).</p> <p>d. Rolling Stock Purchase affects positively the 294 Contract (+3) and the Annual Budget (+2)</p> <p>e. Performance Monitoring impacts on the Rail Plan, the 294 Contract and Modernization Projects (+2).</p> <p>f. Proposals for State's Plan affect positively the Rail Plan, the 294 Contract and Modernization Projects (+3).</p>
80	22	28	8	36	<p>Strategic Decisions on Environment</p> <p>a. Contract 294 impacts negatively on Economic Policy (-3).</p> <p>b. Annual Budget impacts positively on Economic Policy Policy (+3) and on Pricing Policy (+2).</p> <p>c. Rolling Stock Purchase influences positively the Economic Policy (+2) and negatively the Problems with Suppliers (-2).</p> <p>d. The Supervisory Board impacts negatively (-2) on Employees Participation in Decision-Making.</p> <p>e. The Proposals for State's 5-Year Plan affect positively the Economic Policy (+2).</p>
70	26	37	2	8	<p>Strategic Decisions on Organizational Context</p> <p>a. Organizational Structure impacts negatively on Bureaucratic Phenomena (-2) and on positively on the Management System (+2).</p>
80	31	39	10	32	<p>Environment on Strategic Decisions</p> <p>a. Pricing Policy influences positively the Annual Budget (+3), the Modernization Projects (+2) and the Proposals for the State's 5-Year Plan (+2).</p> <p>b. The Economic Policy impacts negatively on the Rail Plan (-3), the 294 Contract (-2) and the Proposals for the State's 5-Year Plan (-2).</p> <p>c. The Administrative Controls influence negatively the Rail Plan (-2), the 294 Contract (-2), the Modernization Plans (-2) and the Rolling Stock Purchases (-2).</p>
56	11	20	1	9	<p>Environment on Environment</p> <p>a. The Pricing Policy affects positively the Economic Policy (+3).</p>
70	22	31	2	9	<p>Organizational Context on Strategic Decisions</p> <p>a. The Bureaucratic Phenomena impact negatively on the Modernization Projects (-2).</p> <p>b. The Corporate Culture impacts negatively on Performance Monitoring (-2).</p>

Figure F21: Strategist 2: Identified Strong Relationships

potential entries	identified relationships		strong relationships		Strategist 5 (Employees Representative 1)
no.	no.	%	no.	%	Direct Impacts
90	39	43	14	36	<p>Strategic Decisions on Strategic Decisions</p> <p>a. The Rail Plan affects negatively the 294 Contract (-3), and positively the Modernization Projects (+3).</p> <p>b. The 294 Contract affects positively the 15-Year Rail Plan (+3).</p> <p>c. The Annual Budget affects positively the Modernization Projects (+2).</p> <p>d. The Modernization Projects impact on the 15-Year Rail Plan (+3), and the Annual Budget (+3).</p> <p>e. The Rolling Stock Purchase impacts positively on the 15-Year Rail Plan (+3) and the Annual Budget (+3).</p> <p>f. Performance Monitoring affects the Organizational Structure (+2).</p> <p>g. The Supervisory Board influences Annual Budget (+2), and Performance Monitoring (+3).</p> <p>h. Organizational Structure impacts on Personnel Training (-2).</p> <p>i. The Proposals for the State's Development Plan influence Rolling Stock Purchase (+2), and the Organizational Structure (+2).</p>
80	18	23	6	33	<p>Strategic Decisions on Environment</p> <p>a. The 15-Year Rail Plan influences positively the Maintenance of Employment (+2).</p> <p>b. The 294 Contract affects the Maintenance of Employment (+2).</p> <p>c. The Annual Budget, Modernization Projects and Rolling Stock Purchase impact on the Maintenance of Employment (+2).</p> <p>d. The Proposals for the State's Plan affect negatively Policies Incompatibility (-2).</p>
80	39	49	29	74	<p>Environment on Strategic Decisions</p> <p>a. Pricing Policy impacts on Annual Budget (+2).</p> <p>b. Employment Maintenance influences the 294 Contract (+2) and the Annual Budget (+2).</p> <p>c. Economic Policy affects negatively the Rail Plan (-3), the 294 Contract (-3), the Annual Budget (-3), Modernization Projects (-3), Rolling Stock Purchase (-3), the Supervisory Board (-3), Personnel Training (-2) and the Proposals to the State's Development Plan (-2).</p> <p>d. Problems with Suppliers influence negatively the Rail Plan (-3), and particularly the 294 Contract (-2), Modernization Projects (-2) and Rolling Stock Purchase (-2).</p> <p>e. Administrative Controls affect negatively the Rail Plan (-3), 294 Contract (-3), Modernization Projects (-3), Rolling Stock Purchase (-3), the Supervisory Board (-3), Personnel Training (-2), and Proposals to the State's Development Plan (-2).</p> <p>f. Bilateral Trade Agreements impact negatively on the Rail Plan (-2), and on the Rolling Stock Purchase (-2).</p> <p>g. Policies Incompatibility impacts negatively on the Rail Plan (-3), Annual Budget (-3), the Supervisory Board (-3), and on the 294 Contract (-2).</p>

Figure F22: Strategist 5: Identified Strong Relationships

potential entries	identified relationships		strong relationships		Strategist 5 (continued)
no.	no.	%	no.	%	Direct Impacts
56	13	23	8	61	<p>Environment on Environment</p> <p>a. The Pricing Policy has a negative impact on Policies Incompatibility (-2). b. Employment Maintenance affects positively Policies Incompatibility (+2). c. The Economic Policy influences Policies Incompatibility (+2). d. Administrative Controls affect Problems with Suppliers (+2) and Policies Incompatibility (+2). e. Bilateral Trade Agreements impact on Problems with Suppliers (+2) and Policies Incompatibility (+2). f. Policies Incompatibility influences Bilateral Trade Agreements (+3).</p>
70	37	53	20	54	<p>Organizational Context on Strategic Decisions</p> <p>a. The Bureaucratic Phenomena affect negatively the 15-Year Rail Plan (-2), the 294 Contract (-2), the Rolling Stock Purchase (-2), and the Organizational Structure (-2). b. Decision-Making System influences the Rail Plan (-2), the 294 Contract (-2), Modernization Projects (-2), Rolling Stock Purchase (-2), and the Organizational Structure (-2). c. Management System impacts on the Rail Plan (-2), the 294 Contract (-2), Modernization Projects (-2), Rolling Stock Purchase (-2), and the Organizational Structure (-2). d. Career Development System affects the Rail Plan (-2), the 294 Contract (-2), Modernization Projects (-2), and Rolling Stock Purchase (-2).</p>

Figure F22 (continued): Strategist 5: Identified Strong Relationships

potential entries	identified relationships		strong relationships		Strategist 6 (Employees representative 2)
	no.	%	no.	%	Direct Impacts
90	44	49	29	66	<p>Strategic Decisions on Strategic Decisions</p> <p>a. The Rail Plan affects positively the 294 Contract (+2), the Modernization Projects (+3), Personnel Training (+3), and Proposals for State's 5-Year Development Plan.</p> <p>b. The 294 Contract affects positively the 15-Year Rail Plan (+2), Modernization Projects (+3), Personnel Training (+3), and Rolling Stock Purchase (+3).</p> <p>c. The Modernization Projects impact on the 15-Year Rail Plan (+2), the 294 Contract (+3), Rolling Stock Purchase (+2), and Proposals for State's 5-Year Plan (+2).</p> <p>d. Performance Monitoring impacts on Rolling Stock Purchase (+3), Modernization Projects (+2), Organizational Structure (+2), and Personnel Training (+2).</p> <p>e. The Supervisory Board affects positively the Organizational Structure (+3), Modernization Projects (+2), the 294 Contract (+2), and the Rail Plan (+2).</p> <p>f. Proposals for the State's 5-Year Plan affect positively the Rail Plan (+3), Modernization Projects (+3), Rolling Stock Purchase (+3), Organizational Structure (+2), and Personnel Training (+2).</p>
80	17	21	6	35	<p>Strategic Decisions on Environment</p> <p>a. The Annual Budget influences positively the Pricing Policy (+2).</p> <p>b. The Supervisory Board impacts positively on Pricing Policy (+2), and on Employees Participation in Decision-Making (+3).</p> <p>c. Organizational Structure affects negatively the Administrative Controls (-2).</p> <p>d. Proposals for the State's 5-Year Development Plan affect positively the Pricing Policy (+2) and Employment Maintenance (+2).</p>
80	36	45	15	42	<p>Environment on Strategic Decisions</p> <p>a. The Economic Policy impacts negatively on Annual Budget (-3) and on Modernization Projects (-2).</p> <p>b. Administrative Controls impact negatively on Rolling Stock Purchase (-2).</p> <p>c. Employees Participation in D-M influences the Supervisory Board (+3), the Organizational Structure (+2), and Personnel Training (+2).</p> <p>d. Bilateral Trade Agreements affect positively Modernization Projects (+3), Rolling Stock Purchase (+3), and the 294 Contract (+2).</p> <p>e. Policies Incompatibility affects negatively Modernization Projects (-3), Annual Budget (-2), the Rail Plan (-2) and Proposals for State's 5-Year Plan (-2).</p>
56	16	29	10	67	<p>Environment on Environment</p> <p>a. The Economic Policy impacts on the Pricing Policy (-3) and on Employment Maintenance (-3).</p> <p>b. Administrative Controls impact negatively on Employment Maintenance (-3).</p> <p>c. Employees Participation in D-M influences positively the Pricing Policy (+3), Employment Maintenance (+2), and Policies Incompatibility (+2).</p> <p>d. Policies Incompatibility affects negatively Pricing Policy (-3), the Economic Policy (-3) and Employees Participation in D-M.</p>

Figure F23: Strategist 6: Identified Strong Relationships

potential entries	identified relationships		strong relationships		Strategist 6 (continued)
no.	no.	%	no.	%	Direct Impacts
70	18	26	5	28	<p>Organizational Context on Strategic Decisions</p> <p>a. Bureaucratic Phenomena impact negatively on Rolling Stock Purchase (-2), and on Organizational Structure (-3).</p> <p>b. Decision-Making System impacts negatively on Rolling Stock Purchase (-2).</p> <p>c. Management System impacts on Rolling Stock Purchase (+2).</p> <p>d. Task Design/Job Definition System impacts positively on Personnel training (+3).</p>

Figure F23 (continued): Identified Strong Relationships

potential entries	identified relationships		strong relationships		Strategist 7 (Employees representative 3)
	no.	%	no.	%	Direct Impacts
90	48	53	17	35	<p>Strategic Decisions on Strategic Decisions</p> <p>a. The Rail Plan affects positively the 294 Contract (+3), the Annual Budget (+2), the Rolling Stock Purchase (+2) and Personnel Training (+2).</p> <p>b. The 294 Contract affects positively the 15-Year Rail Plan (+3), the Rolling Stock Purchase (+3) and the Annual Budget (+2).</p> <p>c. The Annual Budget affects positively the 15-Year Rail Plan (+2), the 294 Contract (+2) and the Modernization Projects (+2).</p> <p>d. The Modernization Projects affect positively the 15-Year Rail Plan (+3), and the Annual Budget (+2).</p> <p>e. The Rolling Stock Purchase influences positively the 15-Year Rail Plan (+2), the Annual Budget (+2), the Modernization Projects (+2) and the 294 Contract (+2).</p> <p>f. Performance Monitoring influences positively the Annual Budget (+2).</p>
80	46	58	12	26	<p>Strategic Decisions on Environment</p> <p>a. The 15-Year Rail Plan influences positively the Administrative Controls (+2) and the Problems with Suppliers (+2) and negatively Policies Incompatibility (-3).</p> <p>b. The Annual Budget affects positively the Pricing Policy (+2) and the Problems with Suppliers (+2).</p> <p>c. The Rolling Stock Purchases affect positively the Problems with Suppliers (+2) and the Bilateral Agreements (+2).</p> <p>d. Performance Monitoring affects positively Employees Participation in D-M (+3) and negatively Policies Incompatibility (-2).</p> <p>e. The Supervisory Board influences Employees Participation in D-M (+2).</p> <p>f. Organizational Structure affects negatively Administrative Controls (-2).</p>
70	41	59	7	17	<p>Strategic Decisions on Organizational Context</p> <p>a. Performance Monitoring affects negatively Bureaucratic Phenomena (-2) & positively the Decision Making system (+2).</p> <p>b. Organizational Structure influences positively the Management System (+2), Corporate Culture (+2), and Career Development System (+2), and negatively the Bureaucratic Phenomena (-2).</p> <p>c. Personnel Training impacts negatively on Bureaucratic Phenomena (-2).</p>
80	41	51	10	24	<p>Environment on Strategic Decisions</p> <p>a. Administrative Controls impact negatively on Rail Plan (-3), and on the 294 Contract (-2).</p> <p>b. Problems with Suppliers influence the rail Plan (-2), the 294 Contract (-3), the Annual Budget (-2) and Modernization Projects (+2).</p> <p>c. Bilateral Trade Agreements affect the 294 Contract (+2), the Annual Budget (+2), and Modernization Projects (+2).</p> <p>d. Policies Incompatibility impacts on Performance Monitoring (-2).</p>

Figure F24: Strategist 7: Identified Strong Relationships

potential entries	identified relationships		strong relationships		Strategist 7 (continued)
no.	no.	%	no.	%	Direct Impacts
56	36	64	12	31	<p>Environment on Environment</p> <p>a. The Pricing Policy has negative impact on Policies Incompatibility (-2).</p> <p>b. The Economic Policy impacts negatively on Problems with Suppliers (-2).</p> <p>c. The Administrative Controls impact positively on the Problems with Suppliers (+2).</p> <p>d. The Problems with Suppliers affect negatively the Economic Policy (-2), the Bilateral Agreements (-2), and the Employees Participation in D-M (-3), and affect positively the Administrative Controls (+3) and the Policies Incompatibility (+2).</p> <p>e. The Employees Participation in Decision-Making impacts negatively on the Policies Incompatibility (-2).</p> <p>f. Bilateral Trade Agreements impact negatively on the Problems with Suppliers (-3).</p> <p>g. The Policies Incompatibility affects negatively Bilateral Trade Agreements (-2).</p>
70	41	58	6	17	<p>Organizational Context on Strategic Decisions</p> <p>a. The Bureaucratic Phenomena affect negatively the 15-Year Rail Plan (-2), the 294 Contract (-2), the Annual Budget (-2), the Performance Monitoring (-2) and the Organizational Structure (-2).</p> <p>b. The Decision Making System impacts positively on the 294 Contract (+2).</p>

Figure F24 (continued): Strategist 7: Identified Strong Relationships

potential entries	identified relationships		strong relationships		Strategist 8 (Head of the Department of Planning)
no.	no.	%	no.	%	Direct Impacts
90	37	41	21	57	<p>Strategic Decisions on Strategic Decisions</p> <p>a. The Rail Plan impacts positively on the Annual Budget (+3) and on Proposals for the State's 5-Year Development Plan (+2).</p> <p>b. The 294 Contract influences positively the Annual Budget (+2).</p> <p>c. Annual Budget affects positively the Rail Plan (+3), the 294 Contract (+3), Modernization Projects (+3), Rolling Stock Purchase (+3), and the Proposals for State's 5-Year Development Plan (+3).</p> <p>d. Modernization Projects affect positively the Rail Plan (+3) and Annual Budget (+3).</p> <p>e. Rolling Stock Purchase impacts on the Annual Budget (+3).</p> <p>f. Performance Monitoring influences the Rail Plan (+2).</p> <p>g. Supervisory Board affects the Rail Plan (+3), Modernization Projects (+3), Performance Monitoring (+3), and the Proposals for State's 5-Year Development Plan (+3).</p> <p>h. Organizational Structure affects Performance Monitoring (+2).</p> <p>i. Proposals for State's Plan impact on Modernization Projects (+3), Annual Budget (+3), and Rolling Stock Purchase (+2).</p>
80	9	11	5	55	<p>Strategic Decisions on Environment</p> <p>a. Annual Budget impacts on Pricing Policy (+2).</p> <p>b. Supervisory Board affects Pricing Policy (+3).</p> <p>c. Organizational Structure impacts on Employees Participation in D-M (+2).</p> <p>d. Personnel Training affects Employment Maintenance (+2).</p> <p>e. Proposals for State's Plan influence Pricing Policy (+2).</p>
70	14	20	12	86	<p>Strategic Decisions on Organizational Context</p> <p>a. Performance Monitoring impacts on Corporate Culture (+3), Compensation System (+3) and Career Development System (+3).</p> <p>b. Supervisory Board affects Decision-Making System (+3) and Management System (+3).</p> <p>c. Organizational Structure affects Bureaucratic Phenomena (-3), Decision-Making System (+3), Management System (+3), Task Design (+3), Corporate Culture (+2), and Career Development System (+2).</p> <p>d. Personnel Training impacts on Task Design (+3).</p>

Figure F25: Strategist 8: Identified Strong Relationships

potential entries	identified relationships		strong relationships		Strategist 8 (continued)
	no.	%	no.	%	Direct Impacts
80	29	36	18	62	<p>Environment on Strategic Decisions</p> <p>a. Pricing Policy affects the Annual Budget (+3).</p> <p>b. Employment Maintenance influences the Annual Budget (+3).</p> <p>c. Economic Policy affects negatively the Rail Plan (-3), the 294 Contract (-3), Modernization Projects (-3), Rolling Stock Purchase (-3), and Personnel Training (-3), and positively the Annual Budget (+3).</p> <p>d. Problems with Suppliers impact negatively on 294 Contract (-3), and Rolling Stock Purchase (-3).</p> <p>e. Employees Participation in D-M influences the Supervisory Board (+3) and Organizational Structure (+3).</p> <p>f. Bilateral Trade Agreements influence positively the Annual Budget (+2).</p> <p>g. Policies Incompatibility affects negatively the Rail Plan (-2), Annual Budget (-2) Modernization Projects (-2), and Proposals for State's Plan (-3).</p>
56	12	21	7	58	<p>Environment on Environment</p> <p>a. The Economic Policy influences negatively Employment Maintenance (-2).</p> <p>b. Problems with Suppliers affect negatively Bilateral Trade Agreements (-3).</p> <p>c. Policies Incompatibility influences negatively Pricing Policy (-3), Econ. Policy (-3), Bilateral Trade Agreements (-3), and Administrative Controls (-3).</p>
70	22	31	13	59	<p>Organizational Context on Strategic Decisions</p> <p>a. Bureaucratic Phenomena impact negatively on Organizational Structure (-2).</p> <p>b. Decision-Making System impacts on Organizational Structure (+3).</p> <p>c. Management System affects positively the Rail Plan (+2), the Annual Budget (+3), Modernization Projects (+3), Performance Monitoring (+3), Organizational Structure (+3), Personnel Training (+2), and Proposals for State's Plan (+2).</p> <p>d. Task Design influences the Supervisory Board (+2) and Personnel Training (+3).</p> <p>e. Corporate Culture impacts on Performance Monitoring (+2).</p> <p>f. Career Development System affects Performance Monitoring (+3).</p>

Figure F25 (continued): Strategist 8: Identified Strong Relationships

F.8. DIRECT AND INDIRECT CONSEQUENCES

Stubbart and Ramaprasad (1988) introduced a qualitative attribute of cognitive maps being derived from matrices. They stated that in a "well-behaved" map, high-order consequences mirror low-order ones; that is, the indirect effects of a concept should exhibit the same net consequences as the ones exhibited in the direct obvious ones. By net consequences they mean that the direction of the relationship between two concepts has to be the same for both direct and indirect consequences.

	strategist 8			strategist 2			strategist 5			strategist 6			strategist 7		
	A	C	F	A	C	F	A	C	F	A	C	F	A	C	F
	s s	s s	s s	s s	s s	s s	s s	s s	s s	s s	s s	s s	s s	s s	s s
	c q	c q	c q	c q	c q	c q	c q	c q	c q	c q	c q	c q	c q	c q	c q
	o u	o u	o u	o u	o u	o u	o u	o u	o u	o u	o u	o u	o u	o u	o u
	r a	r a	r a	r a	r a	r a	r a	r a	r a	r a	r a	r a	r a	r a	r a
	e r	e r	e r	e r	e r	e r	e r	e r	e r	e r	e r	e r	e r	e r	e r
	e	e	e	e	e	e	e	e	e	e	e	e	e	e	e
A	0 22	3 25	0 2	0 8	2 10	0 4	0 21	0 4	0 -2	0 -24	0 -12	0 0	0 13	0 2	0 7
B	1 6	2 3	0 0	3 12	2 18	0 1	2 18	0 2	0 0	3 -18	0 0	0 0	1 17	0 -1	0 3
C	3 18	0 49	0 0	2 11	0 24	1 -2	0 2	0 5	0 0	0 -28	0 -28	0 0	0 0	0 13	1 3
D	3 9	3 9	0 0	3 7	2 17	0 3	2 14	0 3	0 0	3 -12	3 5	0 0	3 4	0 5	2 0
E	1 10	3 9	0 0	2 17	2 21	0 -1	1 10	0 0	0 0	3 -12	3 6	0 0	1 2	2 5	0 2
F	2 1	0 6	0 0	0 11	2 3	0 10	1 10	0 2	0 -2	0 5	0 -16	0 0	2 14	1 3	0 7
G	3 29	1 50	3 11	-1 9	1 6	1 1	2 11	1 9	1 -1	0 4	2 0	3 0	0 2	0 2	0 2
H	0 6	0 7	2 16	0 16	1 8	0 9	-1 -3	0 -4	-1 -3	1 2	0 6	0 0	0 6	0 4	0 5
I	0 5	1 6	0 3	1 13	1 10	0 6	2 11	0 0	0 1	0 -18	0 -26	0 0	0 6	0 3	1 2
J	1 21	3 27	0 0	0 2	1 0	0 1	3 11	0 10	0 -1	0 -5	0 -18	0 0	3 10	0 10	0 7
K	0 12	3 3	0 0	0 5	1 1	0 13	0 0	3 0	0 0	0 -5	-2 -9	0 0	0 5	3 6	0 8
L	1 9	3 5	0 3	1 1	0 -2	0 9	0 -1	1 -1	0 -1	1 0	2 -4	0 0	0 2	0 2	0 2
M	-3 -11	3 -49	0 0	-1 7	1 -2	0 4	-1 -11	-3 -11	0 0	-3 -13	-3 -30	0 0	-3 -10	1 3	0 0
N	-1 -20	0 -37	0 -12	-3 -6	1 -20	-1 2	0 -3	0 -14	0 0	-3 -19	0 -31	0 0	-2 -6	-1 -2	0 -3
O	-1 -9	0 -3	0 0	-2 -14	-2 -6	-1 -11	-1 -6	0 0	0 0	-3 -23	0 -34	0 0	0 -1	-1 -1	0 -1
P	0 15	0 12	0 30	1 11	0 15	1 11	1 10	1 12	1 -1	1 1	1 5	0 0	-1 -3	-1 1	-1 -1
Q	0 5	2 6	0 0	1 28	2 6	-1 9	1 14	0 3	0 0	-2 -16	0 -28	0 0	0 -1	0 -2	0 0
R	-2 -9	-2 -54	0 -9	-1 7	-1 -5	-2 -3	-2 -13	-2 -4	0 -4	-3 -8	-3 -30	0 0	0 0	0 0	0 0
S	-1 -18	-1 -28	-1 -16	-2 1	-2 -7	-2 -2	0 -3	0 -4	0 2	-2 -2	0 -15	0 0	-1 -11	0 -1	0 -4
T	0 16	0 34	0 26	1 8	1 2	-1 -9	-1 -10	0 -4	-1 -4	-2 -23	0 -20	0 0	-1 -4	-1 2	0 1
U	2 21	3 36	3 18	1 9	1 5	-1 -9	0 3	1 0	1 0	-2 -24	1 -5	0 0	-1 3	-1 4	-1 0
V	0 9	0 14	0 24	1 10	1 15	0 -4	0 7	0 2	0 1	-1 -1	0 -5	0 0	0 0	0 0	0 0
W	0 8	0 6	2 6	0 16	1 5	1 2	0 5	0 5	0 4	1 -1	0 12	0 0	0 -1	0 1	-2 2
X	0 7	1 6	0 21	1 10	1 4	0 8	0 0	-1 1	0 1	1 2	0 8	0 0	0 0	0 0	0 2
Y	0 12	0 12	3 15	1 8	1 -1	0 9	0 0	0 0	0 0	-2 -3	0 -8	0 0	0 0	0 0	0 2

Figure F26: Direct and indirect consequences

Figure F.26 shows the relationships according to these five strategists between the causal factors of (1) the Rail Plan, (2) the Annual Budget, and (3) Performance Monitoring. It includes direct consequences (concept a -> concept b) and indirect consequences (concept a -> concept x -> concept b) for all the three concepts examined. In general, strategists perceived direct and indirect effects in a quite balanced way. Maps were "well-behaving" apart from a few exceptions. When external factors were concerned, the indirect consequences did not mirror the direct ones. Also, for some rare cases, imbalanced consequences were depicted especially when organizational factors were the causal concepts.

APPENDIX G

GROUPS: DRAWING COMPOSITE MAPS

G.1. INTRODUCTION

As shown in **Chapter 6**, the individual analysis of cognitive maps revealed some similarities in structures of cause-effect relationships between concepts of strategy and a variety of stimuli, both organizational and environmental. However, as pointed out by **Hurst, Rush and White (1989)**, the actions of an organization are not directly impacted by the cognitive preferences of its top managers. It is the behaviours of this group and the integration of these behaviours into a pattern of organizational actions which impact strategy and performance.

In order to explain how the mix of strategists' cognitive structures have impacted decision outcomes, an attempt will be made in this appendix to synthesize the strategists' maps around strategy-areas and across different strategic groups, arising out of the strategists' characteristics and the structure of the Board. The method employed draws on the framework set forth by **Pettigrew (1985, 1988)** and on relevant guide-lines proposed by other researchers (**Pinfield, 1986; Etzioni, 1975; Giddens, 1979**). It has been shown in **Chapter 4** that this method concentrates on: (a) the identification and description of the frames of references that strategists shared in terms of specific changes; (b) discerning similarities and differences; and (c) providing explanations as to what these differences indicate. Further, the way will be explored in which collective (group) interpretations influenced the interpretation of others and/or were influenced by them. The composite maps, that illustrate the accumulated knowledge structure of these groups, will be formed on the basis of the following variables: (1) participants' representativeness, (2) educational background, and (3) political affiliation.

G.2. THE SELECTION OF VARIABLES

Since, as stated, one of the main premises of this research is that participants profoundly influence the decision process and do make a difference in defining and solving strategic problems (Schendel, 1989), then a research objective concerned with the way patterns of organizational activity are shaped by participants' frames of references must draw attention to the subject variables (or organismic variables) that a research subject brings along to the research setting. Particular backgrounds, interests, experiences, competencies, as well as beliefs, actions and interactions may act as catalysts for decision-outcomes (Pinfield, 1986) and may provide answers to questions such as:

- How a convergence in group frames of reference comes about?
- Are members of different groups predisposed to provide certain aspects of a strategy concept and why?
- Which aspects of their environment as well as assumptions about management and their roles account for similarities/differences in the strategy concept?
- How is a dominant reality developed?
- What is the individual contribution to group's understanding?

s t r a t e g i s t s	groups based on								
	representa- tiveness			educational background			political affiliation		
	em- plo- yees	ma- na- gers	admin- istra- tors	eng- ine- ers	eco- nom- ists	other	sup- por- ters	op- pon- ents	neu- tral
General Manager			*	*			*		
Assistant General Manager		*		*			*		
Head of the Planning Dept.		*		*					*
Employee Representative 1	*					*	*		
Employee Representative 2	*					*	*		
Employee Representative 3	*			*				*	
Government Representative 1			*	*			*		
Government Representative 2			*		*		*		
t o t a l s	3	2	3	5	1	2	6	1	1
	8			8			8		

Figure G1: Alternative groupings of the strategists interviewed

In this appendix, a grouping of the strategists' cognitions of strategy-areas will be performed, on the basis of the three variables described in a previous section. This grouping will also draw on information deriving from the strategists' accounts, concerning both the way they made certain decisions and the way they interacted and communicated with each other. Thus:

- Within the groups based on participants' representativeness, an investigation will be made as to whether participants acting as agents of certain constituencies (management, labour, government) used the same frames to rationalize about strategy.
- Within the groups based on educational background, the impact of knowledge symmetry/variation will be detected.
- Within the groups based on political affiliation, whether strategists placed faith in a government's policy about a certain organizational area, simply because they were associated with it at a political level, will be investigated.

Figure G1 illustrates the membership of each of the three groups to be studied.

G.2.1. Organizational Demographics

Hambrick (1989), reviewing research on strategic leadership, argued that some of the characteristics of top-management teams such as team heterogeneity and executive tenure have been used in prior research, but there are others, such as knowledge skills, values and cognitive styles, that have been given little attention.

Bantel and Jackson (1989) noted that whereas the bulk of empirical evidence from psychological research on groups supports the general conclusion that team diversity is beneficial for groups engaged in complex problem-solving, organization theorists have recently emphasized the potential costs associated with heterogeneity, especially with respect to organizational tenure and age. Problems stemming from limited communication between people in different cohort groups may limit or inhibit the exchange of valuable information. **Dess and Origer (1987)** noted that executives' perceptions of the environment may vary with individual differences, individual repertoires and social expectations, and may influence the objectives and competitive methods espoused by them. In addition, groups that are heterogeneous in terms of functional experiences are likely to differ in their attributes, knowledge and perspectives (**Hambrick and Mason, 1984**). Differences among managers from different functions may be due in part to differences in their education but also to work experiences. A

person's functional background affects not only which problems (s)he identifies as important; it also shapes the whole process followed in problem formulation, solutions generation and evaluation, and, more important, defines the degree of involvement during the implementation phase.

G.3. FRAMEWORK FOR EVALUATION OF THE GROUP STRATEGY CONCEPT

Classifying individual cognitive maps into strategic groups allows for more precise statements to be made about organizational behaviour within and across groups, in terms of different strategy-areas. Moreover, analysing the way in which similarities and differences are evident in the composite maps of different interest groups, helps shaping patterns in the process of change and provides evidence of the dynamic relationships among groups and change patterns. As discussed in **Chapter 4**, the theoretical framework used for this classification will be the contextualistic approach set forth by Pettigrew (1985, 1988). He argued that, in order to study change, three basic concepts should be taken into consideration:

- the **context**, which is the answer to the "*why*" of the change;
- the **content**, which is the answer to the "*what*" of the change, its substance and extensiveness, as well as its articulation with other strategy-areas; and
- the **process**, which describes how the change is being driven through, the way things are done, either by the use of working parties or external change agents or top-down directives. Important areas to be explored here are:
 - **Participation**: Did the group members participate in the decision process? Have changes in the occupants of positions influenced the change area?
 - **Interaction with other groups**: Which were the members' performance obligations? What were the roles of other groups?
 - **Commitment to Action**: Were there apparently incompatible (non different is not the same as contradicting) interpretations? Was it because the outcome of a specific decision was perceived as problematic? Which was the value they assigned to the decision? Was an impression created that "*no change*" is a *de facto* Board's decision?

- **Intervention:** Was there a development of a new perspective since the existing situation was perceived unsatisfactory?

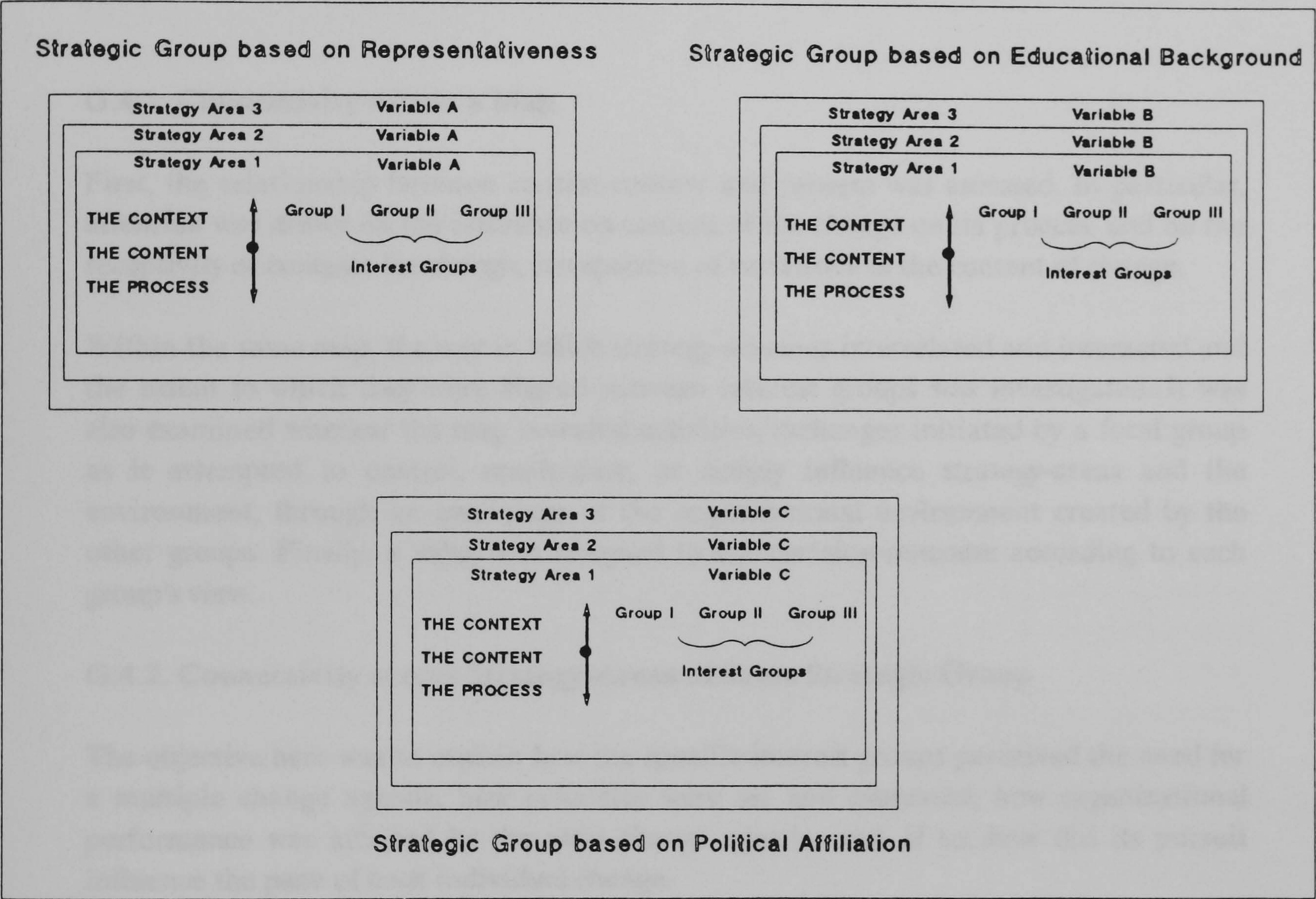


Figure G2: Framework for the evaluation of the strategy concept

The key objective will be to position and establish relationships between these three concepts. Pettigrew (1988) emphasized that change in longitudinal research means much more than an event. The critical task is to inquiry into the underlying logic that gives events meaning and significance; this may be achieved better when comparisons are being built into the research design.

Figure G2 substantiates the way in which Pettigrew's framework will be utilised for the purposes of this appendix and illustrates its constituent elements. The way in which conclusions are to be drawn will be presented in a next section.

G.4. CONNECTIVITY OF LEVELS

G.4.1. Connectivity within a Map

First, the relationship between context-content and process was assessed. In particular, attention was drawn on the influence on content of the change on its process, and on the receptivity of contexts for change, irrespective of variations in the content of change.

Within the same map, the way in which strategy-schemes interrelated and interacted and the extent to which they were shared between interest groups was investigated. It was also examined whether the map revealed activities/exchanges initiated by a focal group as it attempted to control, manipulate, or simply influence strategy-areas and the environment, through an awareness of the organizational environment created by the other groups. Finally, a value was assigned to the decision-outcome according to each group's view.

G.4.2. Connectivity across Strategy-Areas of Same Strategic Group

The objective here was to explain how the specific interest groups perceived the need for a multiple change agenda, how priorities were set and evaluated, how organizational performance was affected by the total change agenda, and, if so, how did its pursuit influence the pace of each individual change.

G.5. STRATEGIC GROUPS BASED ON REPRESENTATIVENESS

G.5.1. Strategy Area: Means Acquisition

G.5.1.1. Interest Group 1: Employees' Representatives

Employees' representatives perceived context in terms of the government's discretion to provide funds and to intervene in procurements. They also noted the urgent need to acquiring means for producing quality services and enhancing the employees'

technological competence. Some of them pointed out to organizational weaknesses that handicapped the rate of change in this area. No major comments were made on the process followed in these matters. They seemed to consider this activity as a routine-based one, set in place long before their entry to the Board. They assigned strategic significance to this area because they perceived the desired future state of the company as legitimate; however, even in cases where weaknesses were perceived, they could not articulate the way to reach this final state. They did not mention any relationships with the other groups, nor any performance obligations as to how the development of this new perspective should be forwarded to cope with the mentioned difficulties. Yet, they believed that their presence on Board made a positive contribution to some decisions because they spotted to new alternatives which at last were adopted by the Board.

G.5.1.2. Interest Group 2: Managers

Managers perceived context in terms of government funding. As one of them pointed out, the Board usually ratified decisions made at a Departmental level, usually without any general guide-lines having been set *a priori*. Three years ago a decision was made to double and update those parts of the network that would help in significantly reducing the transit times. Yet, the uncertainty about the flow of funding forced the enterprise to bid small segments of the whole project. The big competition among the subcontractors resulted in offers substantially discounted, in respect with the budgeted expenditure. However, this also resulted in malfunctioning because the subcontractors, having squeezed their profit margins to the limit in order to be awarded the contract, were afterwards trying to find out ways to increase their profit. Thus, delays and lawsuits often occurred. The strategist hoped that after a constant funding rate could be guaranteed such phenomena would cease to exist; being able to bid bigger projects, the enterprise would have to deal with big companies; these companies would, on the one hand, be able to materialize big profits and, on the other hand, to defend strongly their interests, in cases when the railway could not fulfil its obligations. However, he did not commend on the way in which this could be achieved and he did not relate it to any other strategy-area, though he emphasized the low level of the employees' morale and dysfunctions in the decision-making system.

The same manager assessed the employees' representatives as being below expectations. To him, they did not possess any particular expertise and because they feared to take responsibilities they delayed the discussions on projects' proposals. He identified as the only capable among them the representative of the union supporting the opposition. Yet, he argued, this employee, despite his capacity, used to spend his time in feeding the opposition with inquiries concerning the railway. Such inquiries were taken to the Parliament by MPs of the opposition and had to be answered by the Minister.

This manager's opinion about the General Manager was that he managed to boost modernization projects that were stagnating for more than three years, since, by his own attempts, a constant funding rate was ascertained. As he said, though there was an initial agreement between the government and the enterprise, the setting up of a committee to implement the guide-lines failed, because the people involved (both railway and government officials) had their own reasons not to want such an effort to be successful. To him, this was only a question of people; he did not identify it as an issue with multiple dimensions, where different stakeholders used political mechanisms, in order not to loose access to an important resource allocation process.

Despite their shared belief about the strategic significance of these projects, the managers did not seem to share the same knowledge about the events that occurred during the process. One may note that powerful actors were involved in separate activities while the lack of strategic information allowed for different rationales to develop.

G.5.1.3. Interest Group 3: Administrators

Two administrators shared the view that, given the state of the network's infrastructure, the modernization projects were important. One of them perceived the General Manager's initiative to guarantee, through the Community, a constant level of funding as fundamental for the implementation of the Plan. He argued that though government's funding was not at all of the expected level, it was greater than the one experienced in the past; at the end, he insisted, government had to balance demands made by all transport modes.

He considered that the employees' representatives were delaying decision processes on Board. To him, this was not a major issue since they did not have previous experience and they faced difficulties in the process of coming to grips with new matters. He assessed the initiative of the new General Manager as important for the continuation and completion of the modernization projects.

Strategists in this group shared the view that rolling stock acquisition was a strategic issue, though there was no consensus over the perspective associated with it. One of them did not attribute any new perspective, apart from that concerning new means for the production of services. The second administrator identified the dimension of the enhancement of technological competence, because the company would not be dependent any more on the power that suppliers had on dictating their own terms. Only the General Manager related this issue to the possibility of divesting of these activities now that a domestic equipment manufacturing company was developing.

G.5.1.4. Conclusions

The employees' representatives seemed to acknowledge the negative impact of the context, beside the positive organizational need to develop in terms of this strategy-area. Yet, they did not seem to be much involved in shaping a different process. There was no much debate on this issue in their accounts. Even the most qualified among them (in terms of technical expertise, and taking into account the opinion expressed about him by the Assistant General Manager) shared the same frame. Growth, in this sense, was perceived as a self-explaining strategy concept.

The managers shared the belief in the importance of the modernization projects but they didn't see the process of implementing these projects as burdened to the same degree by the same factors. Those involved in negotiations with external constituencies seemed to be more "*anxious*" for a development of a new perspective to overcome the problem and welcomed efforts regarding the development of this new perspective; others relied upon well-known and spotted frames, such as rolling stock standardisation, and assessed the government's impact in this respect as absolutely overwhelming. They doubted the General Manager's perspective of divestment, arguing that this new manufacturing industry would not be able to survive on its own.

The administrators' rationales resembled more those of the employees' representatives, as far as context and process were concerned. Also, like employees, their views differed as to what rolling stock construction projects should be aimed at after the completion of the track modernization. They did not seem willing to accept General Manager's views about divestment. He was the only one to point out to the new strategic dimension for rolling stock activities, implicitly recognizing the inherent difficulties associated with government's interventions in public procurements.

These three Board-groups did not seem to interact at all. The employees' representatives either regarded the means acquisition process as outside their interests (or beyond their capabilities) or, if they did take it into account, they regarded it rather as a means of generating confrontation (probably admitting that political interests were at stake). The managers "*tolerated*" their pressure on Board. Finally, the administrators' overall attitude was neutral toward both the managers and the employees.

G.5.2. Strategy Area: Management Control

G.5.2.1. Interest Group 1: Employees' Representatives

A wide array of elements in the context were perceived as threats, with little explicit connection among them. Though, as reported in previous chapters, the employees'

representatives opposed to the structure proposed by the former General Manager and managed to block it legally, they voted for the new structure introduced by the acting General Manager, without seeming to be convinced about the need for this change. They probably understood this change as a move towards the compliance to Community's directives concerning the railways. Most of them attacked management either on the grounds of limited capacity or on a political basis, by stressing the controlled flow of information toward the members of the Board or the manipulation of the managerial structure on the part of the former General Manager. There was no report on direct interactions between managers and employees' representatives during the development of proposals concerning the organizational structure. This may explain why the confrontation occurred at a level outside the railway. The employees representatives shared the belief that structure had nothing to do with the implementation of the Plan. It was the people at the top who should take the blame for the structure's ineffectiveness, either because they did not know what to accomplish or because they lacked the necessary mechanisms to activate the structure, or finally because they were manipulated by a higher authority.

Though their rationales developed along different lines, the employees' representatives perceived their role on the Board in the same way. Control could not be exercised by them and nothing could be done to solve the problem (that is, there was no strategic significance in this area), either because the General Manager was getting from the bottom-up line what he wanted to get (and since he controlled the majority of the Board it would be a paradox to discuss control issues), or because the supervisory board was ineffective and never controlled the enterprise. The third representative who blamed the hierarchy and questioned the General Manager's view to direct the organization through the control of the Heads of the Departments, said that control issues never reached the agenda. He concluded: *"I don't dare raising the issue, because as soon as it gets there I have to insist"*. He seemed not to feel at ease with such an issue on the Board and this was probably due to many factors (the dominant role of the General Manager, a majority that he felt as being alien to him, etc.). The certain thing was, as he said, that he could voice the management's limited capacity because he was not dependent on their votes for his election on this post. Thus, he made quite clear the political character of his arguments, by relating a perceived organizational weakness to his political chances of being re-elected.

G.5.2.2. Interest Group 2: Managers

The managers shared the belief that organizational structure was an important strategic issue, though their rationales differed on whether the issue of control deserved special attention. The Assistant General Manager noted that the government's policies affected the functioning of the old organizational structure which was over-burdened, especially

on the top. The delay of fully implementing the law (that would grant autonomy over a wide array of decisions) reduced accountability and consequently resulted in greater dysfunctions. Though he commended on his role in the committee that made the proposal for the new structure, he did not, in this case, commend in extent upon the role of the trade unions (that, at the end, blocked the decision on court). He seemed to be convinced that the quality of people elected posed a severe obstacle on the whole process since they were not capable of understanding the rationale for this change of structure. He did not seem to interpret it as a misreading of other demands (especially on behalf of the trade unions). Those demands, arising out of the new power acquired through socialization, would necessitate unions to be consulted or participate, before the decision was made. The arrival of the new General Manager and his proposal for a new structure (placed in the context of building a new firm where infrastructure costs could be allocated more clearly and related to the forthcoming Community policies) that was finally approved by the Board made him sceptical as far as control was concerned. He seemed doubtful since he believed that the General Manager lacked railway expertise; however, he was convinced that the General Manager's enthusiasm was something needed by the company at that time, because it motivated people, including himself.

Control, according to the other manager, was not a strategic issue. Probably he believed that managers did as much as they could or as much they were left with.

The Assistant General Manager believed that the uncertainty about funding crippled the control function and, ultimately, the company's performance. He asserted that under these conditions long-term planning (even over a 5-year horizon) was becoming an utopia. The organization's morale was low because all these drawbacks, cutbacks etc. had almost negated beliefs in success. An interesting issue is why under such conditions he accepted to participate in the committee for the change in the organizational structure which was set up by the former General Manager. Was it something he really believed in or was he just complying to a directive, the whole rationalization aiming at couching the autocratic and conflict-generating character of this process in a well known frame?

G.5.2.3. Interest Group 3: Administrators

The administrator who stressed the significance of the management control strategic-area noticed that the changes in structure had to be done in compliance with the socialization legislation, beside the fact that the trade unions' intervention called them off. He did not commend on whether this intervention had negative implications for the enterprise though, indirectly, he noticed that the existing organizational structure (i.e. the one that the new General Manager proposed) bore significant resemblance to it. Thus, he implied that, ultimately, the firm got over this issue. His knowledge on specific changes introduced by this structure or on what this structure wanted to achieve was

limited. It might be that since the General Manager designed this structure and since he was the one that directed the organization, this meant that he knew better what he wanted. If this was the case, then it also explains why the other administrator did not mention structure at all.

The General Manager, rationalising the change in this area (though he did not consider it as strategic) stressed its contribution to changing the company's attitude toward the quality of service and the move away from a firm preoccupied with implementing construction and procurement projects. The new structure was designed to fulfil this aim and also to make the organization ready for a proper allocation of costs, in a way that would facilitate the separation of infrastructure and operations accounts, in accordance with Community's proposals.

Thus, the administrators (especially the General Manager as the primary change agent), though aware that in the past the content of the change and its process had influenced the final outcome, managed to make context receptive for change.

The issue of control remained unanswered. The General Manager did not consider it at all. The second administrator only noted that the ineffectiveness of the supervisory board posed problems to the enterprise, since control was never exercised over the firm. Probably he meant that the lack of control over the firm resulted in a lack of control within it. Thus, this area could hardly at that time be considered as strategic. Finally, the third administrator pointed to the government's quarterly reviewing of some financial indices. The maintenance of their deviation within acceptable limits could constitute an effective performance monitoring. However, she did not mention what would happen when deviations exceeded the permitted range. Would this imply sanctions on the part of the Board, the General Manager, or both?

Thus, administrators had different views as to what control is, who exercises it, and who is responsible. The vagueness of the legislation and its incomplete implementation augmented these misinterpretations. The complexity of the context in this area impacted the content so much, that in the end nullified the process.

G.5.2.4. Conclusions

The employees' representatives drew on a wide set of context aspects (environmental, organizational) but these were not connected between them. The process with which organizational structure was driven through seemed to have affected their views about content. Content drew on vague concepts such as decentralization or participation in decision-making. The control issue reflected the same ambiguity. One could infer that

this was either because they were not fully certain about what their role was or, if they knew, then this role was concerned with political manoeuvres and argumentation.

The managers had no similarities in their views about structure and control. They either seemed indifferent or disappointed from the process being followed and from the role of the employees. They seemed either to accept the General Manager's role as decisive for this matter or to look up to it in a future, when other priorities would have been solved.

The rationalization schemes of the administrators drew on a very limited set of concepts belonging to the context. They seemed to delegate authority to the General Manager or to the government for this matter. Control processes seemed fragmented and not taken to consequences. The value assigned to this area was full of uncertainty; however, this did not urge them to develop solutions since no problems were evident in their relationships with the other groups.

Thus, no similar frames were present in this strategy-area, apart from the negative influence attributed to the context. Powerful change agents, following different processes, reached different outcomes. Yet, the content of the change remained at both times unclear.

G.5.3. Strategy Area: Enhancing Organizational Capabilities

G.5.3.1. Interest Group 1: Employees' Representatives

Though there was a shared belief among the employees' representatives concerning the need to enhance personnel's capabilities through training, they attributed various causes which, when linked together, provided an outline of the existing ineffective training system. They noted that a programme for technical training abroad was set up. Yet, they did not seem to have participated in this process and they were not fully aware of what this programme was aiming to accomplish. Rewards and/or incentives were not associated to personnel training and most of the employees' representatives did not mention the need for specialists to be additionally rewarded or selectively promoted within the hierarchical structure. Only one strategist in this group mentioned the positive aspect of the recently signed agreement between labour and management, which made provision for higher (though not adequate) compensation to extra-qualified personnel. It is interesting that the employees' representative who considered incompetent management as causing problems to the organizational structure did not attribute any strategic significance to this area; he should be expected to stress the need for a change in the career development system toward the direction of promoting the occupation of managerial posts by the most capable employees.

In summary, the shared belief that the existing situation was problematic did not yield a shared and well articulated frame of reference. The absence of processes, despite the common belief in the technical content, was noticeable.

G.5.3.2. Interest Group 2: Managers

The Assistant General Manager asserted that the lack of the control function affected directly the career development system; the latter affected the organizational structure because it resulted in the passing of responsibility for making decisions to higher hierarchical levels. According to his view, the employees were not encouraged to participate in developing solutions for problems; thus, they feared to make decisions, even when they were asked to. Furthermore, managers were incapable of objectively assessing the performance of subordinates because they could not handle the conflict that would probably arise if a subordinate would consider the treatment of his case as unfair. After all, in a public firm, no one could choose the people he wanted to work with, neither could he lay them off in cases of inferior performance. This was a constraint which should be kept in mind by everyone dealing with such issues.

The Assistant General Manager valued personnel's professional training and was the first to arrange long, on-site training courses abroad (in railway companies, in suppliers' of machinery/equipment installations, etc.) for employees from different functional areas. He expected these groups to form, on their return, the trainers for other employees, in a way promoting a continuous training process. He did not believe that experts could be hired from the environment of the company because, at first, there was no other railway operating in the country, further, the suppliers' manufacturing industries were abroad, and, finally, the domestic universities or other educational institutions did not provide specialised courses in railwaying. He probably believed that technological railway expertise was a prerequisite for a qualified manager. Though he was aware that other railway firms in Europe had managers and even top managers hired from other private industries, he insisted that this could not be the case for the studied enterprise.

The other manager spoke vaguely about the need for training. He acknowledged top management's commitment to enhance personnel's skills but he did not provide clear evidence whether training was successfully implemented. He did not commend upon any of the other decisions belonging to this area. He probably believed that the existing career development system, based on seniority, was appropriate for a public enterprise as one may presume by considering that he did not mention control either.

The managers did not share the same frames of reference concerning this strategy-area, apart from their consensus on the content. For the one involved in process, process was

assessed as much influenced by the Government's discretion over funding and by the public character of the firm.

G.5.3.3. Interest Group 3: Administrators

The administrators did not express any views as to what the enterprise needed in terms of personnel's capabilities, in order to implement strategy. Only the General Manager stressed that the use of information systems and the promotion of personnel training would assist in changing the firm's attitudes. He introduced extensive computer training sessions for the employees and made a large purchase of micro-computers that were mainly installed at the headquarters. However, at the time of this study, this project was at its very beginning, and no evidence could be provided concerning its implications.

Thus, the adoption of a new mission for the enterprise spotted the importance both of information and systems to effectively transmit it, and of setting in motion training programmes for the whole organization; however, this would probably have not been realised without the new General Manager and without the availability of the Community's grants. Hence, the role of context as change receptor needed a new change agent to facilitate process, in a new content, related to the company's new mission.

G.5.3.4. Conclusions

The employees' representatives drew on various (though not contradictory) concepts from the context, in order to legitimate this change-area. They emphasized the technical content and they seemed not to care about the process. Their accounts were devoid of linkages with other strategy-areas.

The managers had divided views. The one involved in processes to change things rationalized extensively about these processes, though he did not connect relevant concepts within this area. The other's attitude could be described as "*taking things as they come*"; since his role was minimal, no participation or commitment to any action was stressed.

The administrators seemed not to consider this strategy-area as important; when they considered this area, they did it in order to emphasize its supportive role to other areas.

In the strategy area of enhancement of employees' capabilities the employees' representatives seemed to take the importance of the area for granted. Also, powerful change-agents such as the Assistant General Manager and the General Manager, valuing in a different way this area's content, had managed to drive change through, beside the fact that they perceived context in different ways, as a threat or as a challenge

respectively. Their difference also lied in that the first one was doubtful about the final worthiness of this area, while the second used it as a lever for the enterprise's new mission.

G.5.4. Strategy Area: Regulated Finances (Budget, Fares)

G.5.4.1. Interest Group 1: Employees' Representatives

Though the impact of context in this strategy-area was perceived by the employees' representatives as negative (because of government's discretion to allocate funds and to regulate fares), no alternative solutions were expressed, nor participation in a problem-solving process was mentioned. It seemed that the strategic significance of this area was primarily derived from this impact.

G.5.4.2. Interest Group 2: Managers

Apart from the Assistant General Manager who was involved in the past in a process of negotiations with the government concerning terms of financing the enterprise, the other manager seemed to consider the context itself as a primary change-inhibitor. And this context, as has proved, negated processes for change.

G.5.4.3. Interest Group 3: Administrators

Though two of the three administrators shared the view that these regulated change-areas affected negatively the financial performance of the enterprise, it was the General Manager who stressed the view that it was the context that should be changed and not taken for granted, meaning that this particular strategy- area required exploration and subsequent alteration of the fundamental relationships between the state and the enterprise. The tensions between political and managerial judgements should be considered and resolved; then, specific services, that the state wanted to offer to the public at low prices, should be defined. In this case, it would be the state's responsibility to finance the resulting deficits. The rest of the services would be provided by the railway at costs defined by the enterprise itself and it was now the firm's responsibility to achieve financial viability.

The same rationale applied to funding. The low rate of government's funding necessitated the search for a constant funding source. The financial viability of the Rail Plan demonstrated by a study prepared by the Athens Economics University facilitated the company's proposal to the Community for funding, and reinforced the paths along which future organizational activity could proceed.

G.5.4.4. Conclusions

This was the only strategy-area where employees, managers and the majority of administrators shared the same frames of reference, yet reduced to their context component. The only exception was the General Manager's rationalization with a new context, content and process, indicating that this was enough to introduce change when other participants were just waiting for something to happen, considering that this major problem facing the enterprise constituted government's initiative. In this sense, the General Manager enacted an environment that was more dynamic and promising than the ones accounted for by the other administrators (by locating new areas of opportunity) and was the creator of change in this respective strategy area.

G.6. STRATEGIC GROUPS BASED ON EDUCATIONAL BACKGROUND

G.6.1. Strategy Area: Means Acquisition

G.6.1.1. Interest Group 1: Engineers

All engineers, either directly or indirectly (through the mentioning of the 5-year business plan), stressed the importance of this strategy-area for the implementation of the Rail Plan. However, as witnessed by the composite maps presented in a previous section, one of them judged differently the context impact and the implications of change. Despite the diversity of frames, the engineers seemed to value the engineering projects and, even if constraints were experienced along the way, they mostly continued to attribute to them strategic significance. As far as interactions with other groups were concerned, the engineers that referred to these interactions pointed to the delays to convince the Board-members who had no previous experience or expertise on such issues. No other engineer apart from the General Manager stressed the divestment aspect. They did not seem willing to concede what they considered as most important to them.

G.6.1.2. Interest Group 2: Economists

The only member of this group considered this area as strategic. She stressed the government's dominant role in funding; yet, she did not seem to participate in, or to influence the process. It may be that the dominant number of engineers on Board caused the "*setting of rules*" by them and covered any other consideration for specifying an alternative process.

G.6.1.3. Interest Group 3: Other

The last two strategists both stressed the importance of this area. One noted the government's negative impact on efforts to reduce the diversity of rolling stock units, while the other noted the negative impact of the poor quality of studies prepared within the enterprise on modernization projects. Yet, the development of a new perspective, since the existing situation was assessed as unsatisfactory, was only partly pointed out by one of them. The view he adopted concerning the divestment of rolling stock activities was rather an echo of the General Manager's perspective, because no other linkages of this strategic area with others (or with the company's mission) were identified. Being himself a close collaborator of the General Manager during his tenure as vice-governor in the early years of the implementation of the plan, the first strategist in this group was probably influenced by the General Manager's arguments.

The second strategist, believing that the low quality of engineering studies was responsible for delays in the plan's implementation, provided linkages with other strategy-areas, by attributing the reason either to the poor competence of the enterprise's engineers or to management's inability to guide the process. In both cases, one may argue that an answer is thus provided, concerning the hardships this strategist experienced by the engineers, on Board's sessions. Thus, personal considerations negated process within this strategy-area, where interactions were absent or problematic.

G.6.1.4. Conclusions

The engineers enjoyed a dominant position on Board, through both their majority and specialization (especially in the stage of the development of engineering projects). It is the impact of context that resulted in any shortcomings experienced in the process. They seemed to be pressed to get as much out of it when funds were made available, given the time consuming procedures followed in public works bids, that seemed not to tolerate further delays. The economist shared the same scheme as importance of the context was concerned, but not in terms of process which did not seem to attract her interest. The scheme of the two last strategists resembled that of those already mentioned as far as context was concerned; however, probably as a consequence of the dominant group's behaviour (and their feeling of being "*inadequate*" to help), they did not commit themselves to action.

G.6.2. Strategy Area: Management Control

G.6.2.1. Interest Group 1: Engineers

Though the engineers mostly agreed upon the strategic significance of the organizational structure, they drew on different concepts from the context; however, these different concepts were not incompatible (the incomplete implementation of the socialization legislation resulted in the concentration of decisions processes on the top of the enterprise and thus the former General Manager was free to impose his political or personal views on decisions). However, these different lines of argumentation reflected that polarization existed and was cultivated. Apart from the General Manager who was fully aware of the structure's content (given that he himself had designed it), the other members of this group did not seem to know either the content or what was expected to be achieved, and they were not involved in the process.

The same applied to the issue of control. Here, though its significance was noted, no consensus on the desired content and process could be detected. Especially the content seemed vague. The members of this group did not seem to distinguish what sort of control they advocated (control over departmental managers or control over the General Manager).

G.6.2.2. Interest Group 2: Economists

The issue of control was mentioned only briefly. As far its content was concerned, control was perceived as compliance to the government's accounts, especially when curtailments in expenditure were experienced, in periods when the government's economic policy was aiming at reducing the public deficit. Nothing was said about how the government comprehended such controls or who was held accountable for deviations.

G.6.2.3. Interest Group 3: Other

Consensus was not identified concerning the strategic significance of this strategy-area. One strategist mentioned as major problems the limited capacity of the functional managers (who, in their great majority, were engineers) and the vagueness of objectives. He did not seem to connect these two causes; in other words, that the lack of specific objectives rendered managers more submissive to the General Manager's demands. Control was again a controversial issue. They attributed different causes to it; yet, no development of solutions was evident nor performance obligations were stated.

G.6.2.4. Conclusions

The disparity of views among groups in this change-area was astonishing. Socialization legislation or the dominant role of the General Manager were drawn upon, in order to explain the "why" of change in the engineers' group. However, they remained indifferent as far as its content and process were concerned. The economist referred to another context and content but she too was not concerned about process. The last two strategists drew on different concepts in the context, did not rationalize about the content and, despite their intervention in the process (when the alteration of the organizational structure was attempted for the first time), seemed not interested in developing a new perspective.

G.6.3. Strategy Area: Enhancing Organizational Capabilities

G.6.3.1. Interest Group 1: Engineers

Within the engineers' group, most participants attributed strategic significance to the personnel's technological training while the second theme, that is rewards and incentives systems, received much less attention. However, different but not contradicting aspects of context were drawn upon, in order to legitimate this area. The engineers mostly cited the ongoing programme (set up by management) as the only means to implement this change. Despite this effort, the Assistant General Manager who was the programme's initiator believed that uncertainty in funding handicapped its effectiveness; he added: *"what is the point in hiring experts in planning and have them here sitting down, doing nothing"*. The final value was questionable under such conditions of uncertainty.

G.6.3.2. Interest Group 2: Economists

Not significant aspects were expressed by the strategist in this group.

G.6.3.3. Interest Group 3: Other

The composite map of this group was almost identical to that of the employees' representatives group.

G.6.3.4. Conclusions

The frames possessed by the engineers and the other strategists in terms of this change-area were similar in the positive value they assigned to the outcome. Most of the components of the context were perceived as facilitating change. Content was perceived only as professional training. Differences were located in the process of training

implementation. While the engineers relied on the Assistant General Manager's programme, the other strategists seemed to adopt a different perspective, i.e. that of specialists' hiring.

G.6.4. Strategy Area: Regulated Finances (Budget, Fares)

G.6.4.1. Interest Group 1: Engineers

All engineers attributed strategic significance in acquiring investment funds through the state's investment programme; however, context was not perceived as having the same influence. Only the General Manager connected this area to fares' definition and articulated a new process described in previous sections; he even took specific steps in order to operationalize it. Managers-engineers emphasized the vicious cycle the enterprise was operating in, with the increasing deficits and the low culture, whereas engineers-nonmanagers accepted government's discretion to provide funds.

G.6.4.2. Interest Group 2: Economists

Though strategic significance was assigned to both areas and the negative role of the context was emphasized, development of process was not mentioned in order to relieve the enterprise from these implications. Probably, the overriding importance given to Government inhibited any other consideration for change. It seemed as a paradox but here the context's negative impact defined strategy.

G.6.4.3. Interest Group 3: Other

Consensus was not found among the members of this group, neither worth-mentioning points existed referring to this strategy-area.

G.6.4.4. Conclusions

The engineers and the economist perceived the same components in context as negatively influencing this strategy-area. Apart from the new General Manager, they were not involved in the process of implementing a new perspective.

G.7. STRATEGIC GROUPS BASED ON POLITICAL AFFILIATION

G.7.1. Strategy Area: Means Acquisition

G.7.1.1. Interest Group 1: Supporters

There was a shared belief among the supporters of the party in power about the strategic significance attributed to this area, especially to rolling stock acquisition. Two of the most significant change-agents that participated actively in shaping new processes (the Assistant General Manager and the new General Manager) belonged to this group. The remaining supporters perceived context in different terms, that is either as change facilitator (via government's funding) or change-inhibitor (via government's interventions in procurements). The supporters' majority on Board was so decisive that no interactions with others were described, as no need for negotiations or persuasion existed.

G.7.1.2. Interest Group 2: Opponents

The strategist belonging to this group stressed himself the importance of the modernization projects. In the context, he only emphasized the low technological level of the company's infrastructure, while he did not commend at all on his participation in the process, though he generally stressed the need to look for other sources of information, given that the General Manager was selectively presenting it on Board. One may argue that this strategist perceived his role as a "*crusader*", trying to uncover top management's intrigues and scandals. From the archival evidence, it was found that he was the only one who had directly confronted the former General Manager, on matters referring to bids approvals, and had publicly demonstrated his objection through a brochure delivered to the employees.

G.7.1.3. Interest Group 3: Neutral

The importance of modernization plans was stressed and the negative context (that is, the government's low levels of funding) was highlighted by the only member of this group. No participation in a process for changing things was mentioned. He probably believed, from his experience as a senior manager within the enterprise, that the government's will was always posed on the railway; thus, nothing could be done to overcome this issue.

G.7.1.4. Conclusions

The strategic importance of these projects was stressed by all groups. Context was perceived in different terms even within the same group. It was interesting that the rate of change was assessed as being inadequate even by supporters. Powerful supporters believing that a new process had to be followed, since context proved to slow down significantly the pace of change, were involved in negotiations with external constituencies. Opponents seemed to generate confrontation in order to use it for their political benefits as far as no commitment to any other action was expressed.

G.7.2. Strategy Area: Management Control

G.7.2.1. Interest Group 1: Supporters

The members of this group mostly agreed on the significance of this strategic area, though they drew on different aspects of the context (law, government, company's new mission). Some spoke of the new structure as a conformity to the law, others as a need to improve performance, given the economic uncertainty; still others did not seem convinced for the need for this change while there were strategists who questioned the reason for this change, on the grounds that, once again, the same bureaucracy would occupy the posts.

The same applied to control. One may argue that because change in this area had been twice driven through without participation from the strategists involved, questions still existed about its substance and its possibilities to succeed. However, the supporters seemed to take the strategic importance in this area for granted, either because they did not relate it to other areas or because they believed it was an important issue, since it had generated so much conflict in the past.

G.7.2.2. Interest Group 2: Opponents

This was the area where there was direct confrontation on political grounds. The former General Manager was accused of having caused dysfunctions in the organizational structure on two grounds; on the one hand, he had imposed political views on the way decision proposals were submitted by the Heads of the Departments; on the other, he controlled the information passed to the members of the Board which resulted in misinterpretations by them, regarding their jurisdictions. However, the only strategist in this group noted that the vagueness of the legislation concerning socialization had also an impact on this misinterpretation. What should be stressed is that he did not commend at all on the new General Manager's initiatives as far as funding and new structure were concerned. Moreover, he did not mention control. Probably nobody in the enterprise

could be held accountable when the General Manager was believed to play such a dominant role.

G.7.2.3. Interest Group 3: Neutral

The organizational structure was considered as a strategic area by the strategist in this group. However, only legislation and the need to decentralize decision-making were mentioned in the context. He did not seem convinced about the need for change since nothing on the content/process has been said; as he mentioned, changes in the structure to comply with the law should have been limited to the very top (Supervisory Board, Assistants General Managers, executive committee) instead of taking place throughout the organization. To him, as deriving from his map, the major problem seemed to be the rolling stock purchase/maintenance programmes and the influence they exerted on operations. Organizational structure was considered as strategic to the degree that the Supervisory Board would be able to exercise its duties and the enterprise would be granted autonomy to purchase equipment according to its own needs.

G.7.2.4. Conclusions

The variety of factors invoked by supporters to advocate the importance within this area was surprising. However, no one pointed out to the need to fully implement the legislation, to render effective (to the degree they could influence it) the Supervisory Board's functioning. The introduction of this scheme was mainly perceived as causing problems; nobody perceived it as a challenge to building support with external important constituencies and thus to help the enterprise to solve issues of financing, procurement and control. On the other hand, because of the difficulties experienced during a transient period, the opponents grabbed the opportunity to pin-point to political issues; they centred around such issues the whole line of their argumentation. Finally, though the neutral were not convinced about the need for this change they felt compelled to stress its strategic significance.

G.7.3. Strategy Area: Enhancing Organizational Capabilities

G.7.3.1. Interest Group 1: Supporters

Personnel training was mostly agreed as having strategic significance. Different aspects of the context were identified as contributing to it. Some of the supporters, despite the positive value they assigned to this area, defined the context as negatively influencing this sort of activities (trainers, government's funding). Others stressed the importance of process already in place to enhance personnel's abilities; still others emphasized the need to hire specialists in planning, in order to assist in the implementation of the plan. Yet

reward/incentive systems were not related to this, or to any performance measures. The pay scheme, mentioned by one member of this group, was intended to adjust the pay-roll of the company's personnel to that of other public sector firms. This pay scheme was criticised by another member of the group as not inducing specialists to join railways. As he said, only recently the labour agreement had included specific compensation (though not very attractive) for such additional qualifications.

G.7.3.2. Interest Group 2: Opponents

The career development system and personnel training were considered as strategic though they were not connected in any sense. The negative impact of the General Manager's manipulation was pointed out; thus, one may infer that if this constraint was released then the system could again be effective. Training was seen as being important for enhancing personnel's capability to implement the plan (in its technological dimension) and especially its rolling stock component.

G.7.3.3. Interest Group 3: Neutral

The strategic significance of personnel training was noted by the strategist in this group, especially that of technical training in rolling stock's standards/maintenance and of training in marketing. The context was considered as facilitating the process since management induced such efforts. No linkages with reward/incentives systems were identified.

G.7.3.4. Conclusions

Supporters did not share the same frames of reference. Context was perceived differently and so did the process that any one perceived as most appropriate to be followed. Opponents noted its significance but under political terms and without mentioning linkages between similar concepts. Finally, neutral strategists perceived context as facilitating training processes and pointed out to a new area (marketing) that needed to be dealt with.

G.7.4. Strategy Area: Regulated Finances (Budget, Fares)

G.7.4.1. Interest Group 1: Supporters

The importance of this area was noted by all strategists in this group, yet rationales differed as to what aspects of the context did facilitate or inhibit it, and to which extent. Sharing the same political views with the party in power, one would expect that context (when perceived in such terms as non receptive for change and given the importance

they assigned to it), would initiate processes leading to its resolution. However, as evidenced from previous sections, only two of the actors in this group attempted to change the way things were done in the enterprise and to intervene in the process of acquiring constant funding for the plan; they were the Assistant General Manager in the middle of the implementation of the Plan and, recently, the General Manager. However, they followed different paths; the first held meetings with governmental officials while the other looked for a new source outside government. It looked like context's non receptivity for change was perceived by those who had attempted to change it, while the others felt secure by adopting a fatalistic attitude for a deterministic environment.

G.7.4.2. Interest Group 2: Opponents

Here, the negative impact of context (Government) was stressed, though the government's discretion to define funding levels was recognised. The strategist in this group did not commend on whether the arrival of the new General Manager influenced positively this area. His proposal to the Board to submit their resignation when half of the investment budget was truncated by the government was indicative of the way he thought that the handling of these issues should be done; however, he knew that his proposal was never going to be accepted and, by being the only representative of the opposition on Board, he considered political confrontation as a way of showing off during a highly sensitive pre-electoral period.

G.7.4.3. Interest Group 3: Neutral

The importance of this area was stressed by the strategist in this group and its negative implications, arising out of the way deficits in both operational and investment budgets increased, were demonstrated. A comprehensive rationale as to what factors contributed to these deficits pin-pointed to the rolling stock problem. Yet nothing was said about the process of change. He probably believed that this was something outside his own territory and his arguments about organizational structure and the Supervisory Board advocated in favour of this assumption.

G.7.4.4. Conclusions

The supporters' powerful change-agents seemed to drive the change through in this area, within a new context and with a content articulating both financing and fares policy. Opponents seemed more concerned with gaining political advantages out of this process, while the neutral considered the impact of context as overwhelming and their role as too weak to confront it or develop a new perspective.

G.8. CONNECTIVITY ACROSS STRATEGY AREAS

The employees' representatives, as may be seen in their cognitive maps, did perceive the need for a change agenda though they did not set priorities. The two managers exhibited similarities though only the Assistant General Manager's map illustrated the need for a well articulated change and demonstrated a way in which organizational performance was ultimately going to be positively affected. The administrators exhibited some similarities but the strategy-areas were fragmented and not articulated.

The engineers perceived a multiple change-agenda but in different terms and priorities. The same applied to the other occupational groups.

The supporters did not set the same priorities as far as the articulation of strategy-areas was concerned, nor were they interested to the same extent in the way in which the organizational performance was affected. The opponents exhibited a change-agenda centred on structure and systems while the neutral presumed a set of strategy-concepts with little articulation; on the other hand, a well-defined problem, i.e. that of rolling stock purchase/maintenance, had not "*found its way*" to the change-agenda.

G.9. CONCLUSIONS

This appendix aimed at evaluating strategists' cognitive structures in the context of various social groups formed on the basis of (a) participants' representativeness, (b) educational background, and (c) political affiliation. Its findings in terms of the research objectives concerning the mix of cognitive structures and how this affects choices and implementation, are summarised below:

1. Employees' representatives stressed the need for personnel training though they did not initiate or participate in a process that would develop appropriate strategies. These activities were left within the purview of two powerful change agents (the acting General Manager and the Assistant General Manager).
2. Both managers and employees' representatives perceived the environment as volatile and hostile. Though only the General Manager via a new process started creating favourable links with external stakeholders.

3. Engineers' domination on the Board had resulted in adequate attention to shape modernization projects' alternative processes. It also appeared that other members were feeling inadequate or indifferent to review; they only approved managerial proposals concerning this organizational area.

4. Opponents argued about the power that the ex-General Manager exercised over the managers and stressed the significance of the management control area. Also, the flow of information between the General Manager and the Board-members was considered as inadequate. As it can be seen, opponents were the only ones to commend on the General Manager's acts though they only stressed their negative impacts.